1.48
105

ril

ls in the
ime fur-
either an
ecast, for
ower, de-
on the
w. Fruit
general
vell set.
least for
n-normal
ne. The
lays. So
ood. But
sets and
Is it to
he meri-
tise the
ples for
the right
ce, one
ned—the
it. Last
all. All
ce. But
Profit in
upon the
nder-size
by-prod-
the suc-
rom the
es hinge
of fruit.
lume of
ful con-
at prom-
he fruit
rades.

ers are
a class
rs, with
ack and
ers. But
of the
by the
gressive
s, who
ally for
mprove-
with the
fruit
ide gap
hat we
ill pro-
fashion.
of size
d plant
wing a
praying
a light
heavy
ood can
and re-
uit, the
s large
many
grower
heavily
certain

E S
Ave.
ter.
ding.

Bldg.
St.
acific

AMERICAN FRUIT GROWER MAGAZINE

May, 1928
Ten Cents a Copy

VALVE-IN-HEAD Buick MOTOR CARS

Never a car so *Beautiful* *and* Never a car so *Good*

Today's Buick brings to its owners a higher degree of beauty than any other car in the Buick field—

—the beauty of smart, low lines—the beauty of radiant colors—and the beauty of princely interiors upholstered and appointed in rare good taste.

Accompanying this outward beauty—and giving it real meaning—is the superlative goodness and reliability of Buick engineering.

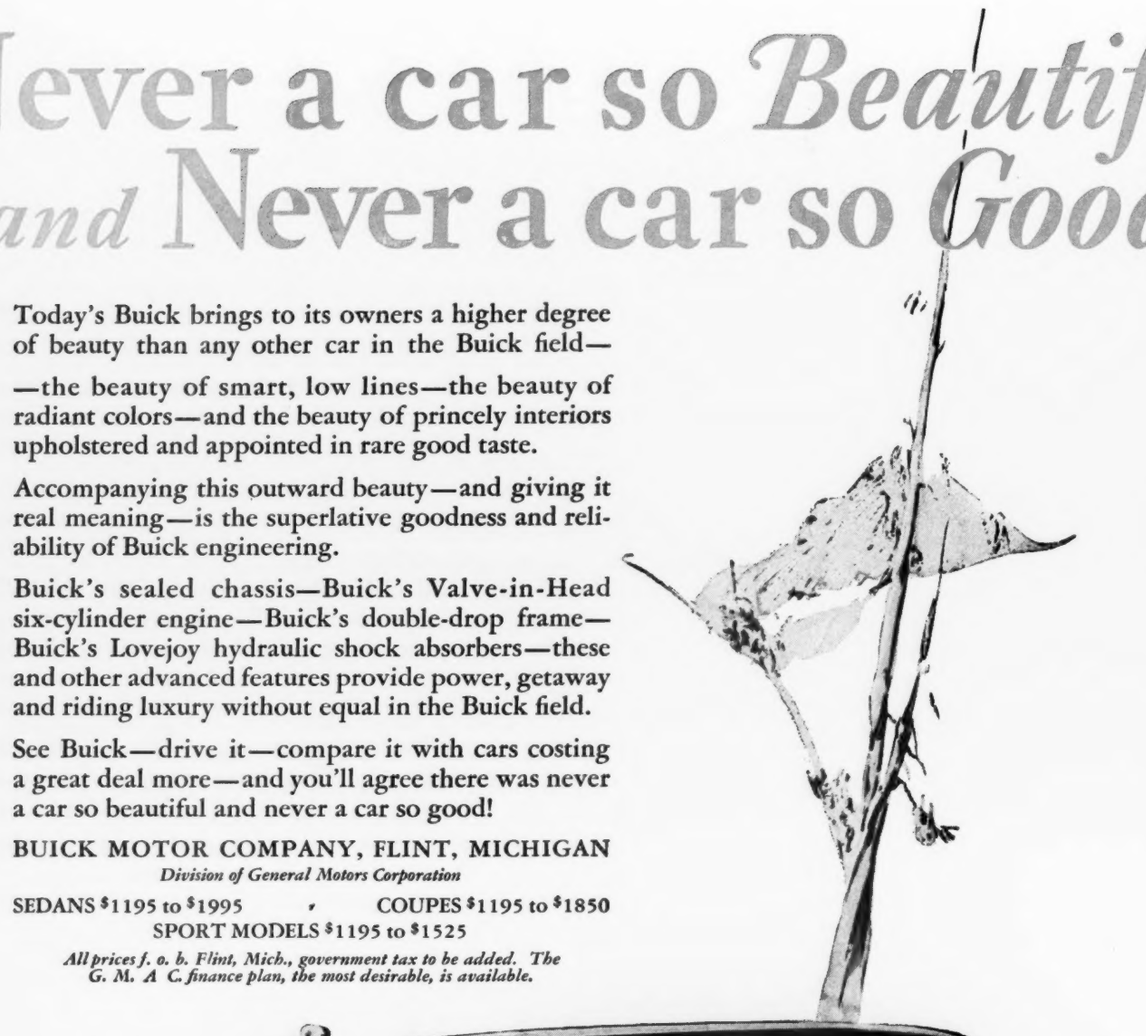
Buick's sealed chassis—Buick's Valve-in-Head six-cylinder engine—Buick's double-drop frame—Buick's Lovejoy hydraulic shock absorbers—these and other advanced features provide power, getaway and riding luxury without equal in the Buick field.

See Buick—drive it—compare it with cars costing a great deal more—and you'll agree there was never a car so beautiful and never a car so good!

BUICK MOTOR COMPANY, FLINT, MICHIGAN
Division of General Motors Corporation

SEDANS $1195 to $1995 · COUPES $1195 to $1850
SPORT MODELS $1195 to $1525

All prices f. o. b. Flint, Mich., government tax to be added. The G. M. A C. finance plan, the most desirable, is available.



WHEN BETTER AUTOMOBILES ARE BUILT...BUICK WILL BUILD THEM

Published on the First of each month by
MAGAZINES, Inc.
53 West Jackson Boulevard
CHICAGO, Ill.

Established in 1880

Title Registered in U. S. Patent Office

Copyrighted 1928

Member Audit Bureau of Circulations

Entered as second class matter Oct. 17, 1917, at Post Office at Chicago, Ill., under Act of March 3, 1879.

THE NATIONAL FRUIT MAGAZINE OF AMERICA

AMERICAN FRUIT GROWER MAGAZINE

SUBSCRIPTION RATES

One year 50c. Three years $1. Five years $1.50. Foreign $1.00 per year

A Subscription Blank is enclosed in the last copy of the subscription period, and should be returned to this office promptly to insure uninterrupted delivery of your magazine.

ADVERTISING RATES

$2.25 per agate line flat. $31.50 per inch per insertion. Classified 15c word.

VOLUME XLVIII MAY, 1928 NUMBER 5

Properly fertilized trees make an apple orchard a source of profit. But beyond the tangible returns from adequate fertilization, there is the freeing of justifiable pride that a crop of high grade fruit inspires.

A 10-bushel crop on a 10-year-old Baldwin. This tree was fertilized with four pounds of nitrate of soda, April 18, 1926. In this orchard the use of nitrogen increased the yield 152 per cent over unfertilized trees.

Nitrogen Produces Profitable Fruit

Orchard Soils Are Usually Deficient in Nitrogen, Hence the Prompt Response the Fruit Tree Makes to Nitrate Applications

By W. W. Weir

Formerly of United States Department of Agriculture

IT MATTERS not where fruit is grown or what kind of fruit it is, nitrogen is required in the production of that fruit. So important is nitrogen that the need of it by crop plants may be regarded as a general law, not only in fruit production, but in the growing of all agricultural crops. Nitrogen is derived from two sources — that which is originally contained in the soil and that which is supplied either in the form of chemical fertilizers or organic manures (including legumes and stable manure).

The mere fact that fruit trees require nitrogen may not mean very much to the casual observer. But if he were interested in fruit growing and were to study carefully how fruit is profitably produced, he would soon learn the full significance of nitrogen in relation to bearing trees. If one were to extend his observations from the Atlantic to the Pacific and then summarize his findings in one statement, in all probability he would couch his summary in words something like this: Successful fruit growers see to it that their trees are well supplied with the elements of plant food, particularly nitrogen.

Successful growers will tell you that it takes a lot of nitrogen to make the fruit-growing business pay, provided, of course, other good cultural methods are practiced. The question naturally arises as to just why nitrogen is so important. This is a very practical question, for without a knowledge of these fundamental facts a fruit grower can easily become a blind follower of rules that would make him a "hit-and-misser," very commonly a "misser." On the other hand, a grower who knows the essential facts about nitrogen in relation to fruit growing is a man who feels sure of himself, because he understands. Knowledge of these things enables him to properly direct his energies, to develop the ability to analyze the conditions surrounding him, and to solve many of his own orchard problems.

To get the facts about the need of nitrogen in profitable fruit production, we may go to two sources —to the scientist who devotes his life to the solving of fruit-growing problems and to the successful fruit grower, particularly to him who has learned how to grow fruit in the school of hard knocks. We need both the scientist and the practical grower in order to get a true understanding of all the facts. Let us go first to the scientist and then to the practical fruit grower, so that we may check the scientist's statements against the actual orchard experience of the grower.

Orchard Soils Are Low in Nitrogen

Perhaps one of the very first reasons why fruit trees need nitrogen is explained by Prof. F. W. Allen, in Bulletin 425 of the California Agricultural Experiment Station, in which he discusses the need of nitrogen in the apple orchards in California. He says: "Although many orchards have been grown with little thought given to soil fertility, its importance as related to tree growth and yields is now generally receiving greater attention. While it may be true in some instances apple orchards are planted on new land which may contain a relatively high nitrogen content and be well supplied in mineral elements, *the majority of trees in the larger producing sections are on lands which *** are likely to be low in available nitrogen and organic*

matter." Prof. Allen calls attention to a condition generally the case, that orchard soils are usually deficient in nitrogen. Thus, fundamentally, soil improvement and the maintenance of soil fertility are two very important factors to consider in every orchard. In meeting these soil problems, the fruit growers of the country have learned to place their reliance in a large measure upon nitrate fertilizers and orchard cover crops of a soil-improving nature. Nitrate of soda is the nitrate fertilizer most commonly used; and of the cover crops, legumes occupy first place.

Nitrogen Versus Nitrate

Ordinarily, we talk much about fruit trees needing nitrogen. But when we talk with some of the scientists on this subject, they will tell us that, when it comes to feeding fruit trees, it is more a question of *nitrates* than of nitrogen.

Nitrogen is an element which occurs in nature as a colorless gas. About three-fourths of the air is nitrogen. But agricultural plants cannot use this nitrogen in the gaseous form as it exists in the air. Before plants or a fruit tree can use nitrogen, this element must first be combined with some other element or elements to form a soluble compound that can be absorbed by the roots. Such a soluble nitrogen compound is called "nitrate." A nitrate easily dissolves in water, so that plants and fruit trees can get it easily and quickly. For convenience, we shall use the term "nitrate nitrogen," meaning that the nitrogen is taken up by the fruit tree in the form of nitrates.

This explanation of these two terms brings to mind an interesting comparison, animals with plants. Both require nitrogen; but animals get it in the form of *protein*, whereas fruit trees and other agricultural plants absorb it in the form of nitrates.

Scientists will tell you another interesting fact about nitrates in relation to fruit trees. The profitable use of nitrogen fertilizers on fruit trees is determined in a large measure by the quantity of nitrate a tree takes in and the time when it is absorbed. These are important facts for the practical grower to know. But scientists have not yet fully solved these problems. Consequently different opinions prevail as to when nitrate applications should be made. However, it is commonly conceded that a fruit tree has the most need of nitrates in the spring, about the time the buds begin to swell.

Nitrate nitrogen increased the yield more than 288 per cent. Charles S. Wilson, of New York, is comparing the 1927 yields of two 16-year-old McIntosh trees. One tree, fertilized with five pounds of nitrate of soda, produced seven bushels, whereas the other one, unfertilized, produced only 1.8 bushels. The containers are half-bushel baskets.

At this time, too, the moisture content in the soil is usually at maximum, insuring rapid dissolving of supplied nitrates. Nitrates dissolved in water are immediately available to the feeder roots of the trees, and as the nitrates wash down into the surface soil, a heavy growth of fibrous roots results.

Of course, the only practical way to supply a fruit tree with nitrate in the form of a fertilizer is to apply the fertilizer on the ground around the tree, to slightly beyond the spread of the outer branches. Here the nitrate dissolves and is immediately absorbed by the feeding roots of the tree.

One can easily understand why, in the spring, it is important to use the right kind of a nitrogen fertilizer and why so many growers use a fertilizer that is easily soluble. At this time of the year, at the sign of the swelling bud, a tree needs its nitrates and this need is best met by applying a nitrogen fertilizer that can easily dissolve. Here it must be remembered that a fruit tree gets all of its fertilizer requirements through the medium of the soil—from the ground in which it is rooted. Thus, the soil bears a close relationship to the tree and its ability to produce.

How Nitrate Affects the Fruit Tree

Let us return to the scientist and ask him how the nitrate affects the tree in making it produce more fruit. Does the nitrate which the tree absorbs flow up into the stem and buds and cause more fruit to form simply because there is a larger supply of this building material? Now we are asking a rather difficult question. The [*To Page* 29]

The Handy Fruit Package Increases Sales

A Package That Looks Easy to Carry Invites a Purchase, if Properly Packed With Attractive Fruit. For the Roadside Stand, the Five-inch Market Basket Proves Serviceable.

By Robert M. Clark

Proprietor, Apple Grove Orchards, Iowa

MOST of us remember when apples were bought in several barrel lots to help fill the old-fashioned cellar for winter. Under that system a much smaller population than our country now has consumed about as many apples as we do at present.

In smaller towns and rural communities, buying in such quantities yet prevails. Many growers sell locally, with lower costs, large amounts of apples to this type of trade. It is the best outlet that they have. This system does a great deal to help keep up the popularity of the apple. Homes supplied in this way have apples at hand more continually and often of better condition and flavor than do city dwellers who purchase in very small quantities from the corner grocery store.

However, if we are to greatly increase the consumption of apples, we must look mainly to the larger urban population to accomplish it. This class does, and probably always will, buy the most part of its supplies from the convenient nearby grocery.

Here is a condition that must be changed before an advertising campaign, like the one contemplated by "Apples for Health, Inc.," can yield the best results.

There are far too many neighborhood grocery stores, resulting in a division of business to the point where their turnover of fruit is very slow, causing waste and damage to quality. The stocks are very limited in variety and margins are large in an effort to make a profit. Over-competition has brought about conditions that stifle the popularity and the consumption of apples in urban centers.

Two views of a sales tent, 125 by 40 feet, erected for harvest season at the "Apple Grove Orchards." At the peak of the season 1000 bushels were kept on display, ready to go. About 8000 bushels were sold into autos, mainly to people from the country and small towns.

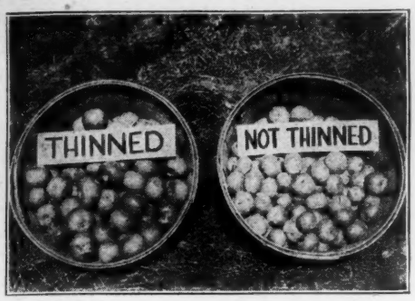
There may be no remedy for the fact that there are too many grocery stores, but the operators could be taught to be more efficient in the selling of apples.

Creating a Good Demand

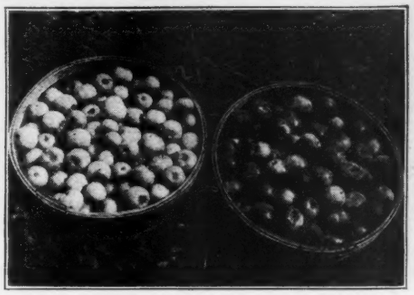
In 1920, we established a retail apple store in Des Moines, Ia., in order to find a better outlet for our apple crop. At first our thought was to attract a large number of customers and sell firm, fresh apples direct from storage, in the customary way of a few pounds in a paper bag, also by the box and bushel basket. It was soon discovered that the number of city people who would buy in bushel lots was very few.

Quite by accident we discovered a good demand for well-filled five-inch market baskets. The five-inch common, inexpensive market basket with double handles can be well rounded up with 18 pounds or one and one-half pecks of apples. The full basket is a large selling force. Later, we thought of turning up the handles of the baskets, giving the baskets the appearance of being ready to go. The apples were priced by the basket.

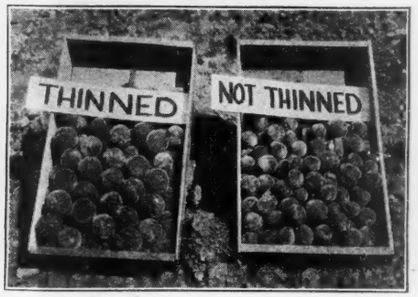
The effect was remarkable. Countless people coming into the store to buy a small bag of apples would, on getting a glimpse of these baskets, stop in their directions about a small purchase and say, "I believe that I will take a [*To Page* 25]



Dutchess apples from thinned and not thinned halves of the same tree. Note difference in size and color.



King David apples. Fruit on left picked from inside, that on the right from outside of the same tree.



Peaches from thinned and not thinned trees of the same variety. Size and color show difference.

For Additional Profits -- Thin Your Fruit

Thinning the Peach and Apple Crop Is an Expense. The Only Justification for Any Added Expense in Growing Fruit Is the Reasonable Certainty That the Operation Will Increase the Crop Income Sufficient to Yield an Extra Profit.

By A. E. Murneek

University of Missouri

FRUIT THINNING is a recognized orchard practice in almost all fruit growing regions west of the Rockies. Lately it has gained in popularity also in midwestern and eastern states. With many successful fruit growers, therefore, thinning has become as indispensable an operation as spraying, pruning and soil fertilization. The reasons are rather self-evident. Supplementary to the major orchard operations, it would be difficult to mention any other practice that will do as much to increase the size and quality of fruit as systematic thinning.

In years of heavy crops, fruit thinning will likewise prevent the loss of branches from breakage. Moreover, it will preserve the vigor of a tree. Fruit bearing is a devitalizing process. As a rule, only vigorous trees are apt to bear profitable crops consistently. Certainly, it is a short-sighted policy to permit trees to carry too great an overload of fruit and thus become exhausted, since under such circumstances, the fruit is usually of small size, of poor color, and, therefore, often unprofitable. This is particularly true in years of a heavy supply, when a substantial premium is offered for the better grades and larger sizes. Thinning is one of the best means of securing this desired perfection.

Fruit thinning in the midwestern states is restricted to the peach and the apple. While thinning of peaches is rather well known, apple thinning is much less understood and hence little appreciated. Recently, however, a number of growers in Missouri and adjoining states have shown a keen interest in apple thinning, particularly in years of high yields. After a careful investigation of the value of this practice in a number of commercial orchards, it has been found that under certain conditions it may prove feasible to thin apples in this section; under others it may be highly profitable. The aim of this article is to present in a concise way some practical suggestions for carrying out the work. Special emphasis is placed on apple thinning.

An over-loaded Jonathan tree. Much fruit on the inside branches is shaded, and many limbs have broken.

The Purpose of Thinning Apples

Thinning is the removal of a part of the crop in order to improve the size and quality of the remaining fruit and lessen the strain on overloaded trees. Consequently, the work is done with a definite object in mind. It has the following distinct advantages in the scheme of orchard management: (1) Increase in size and grade of fruit; (2) improvement in color and quality; (3) reduction in number of defective specimens; (4) decrease in labor of harvesting the crop; (5) prevention of breakage of limbs; (6) preservation of vigor of the tree; and (7) securing of more regular bearing. Probably the most conspicuous advantage resulting from thinning both the apple and the peach is the noticeable increase in the size of fruit.

Size and Grade of Fruit Increased

With favorable fruit bud formation, pollination and setting, most varieties of peaches and many sorts of apples are apt to overbear, in some years at least. The usual result will be fruit of small size and of poor grade. To nourish and develop a large apple, 30 to 50 leaves are needed. With heavy yields the average number of leaves per fruit runs very much short of this requirement. Hence the fruit will be small and of poor quality. There is no better way of adjusting the crop to the ability of the tree to support it than by thinning. A careful consideration of this relationship between foliage and fruit and a necessary adjustment in the right direction by thinning has certainly been highly profitable to the growers of the western states.

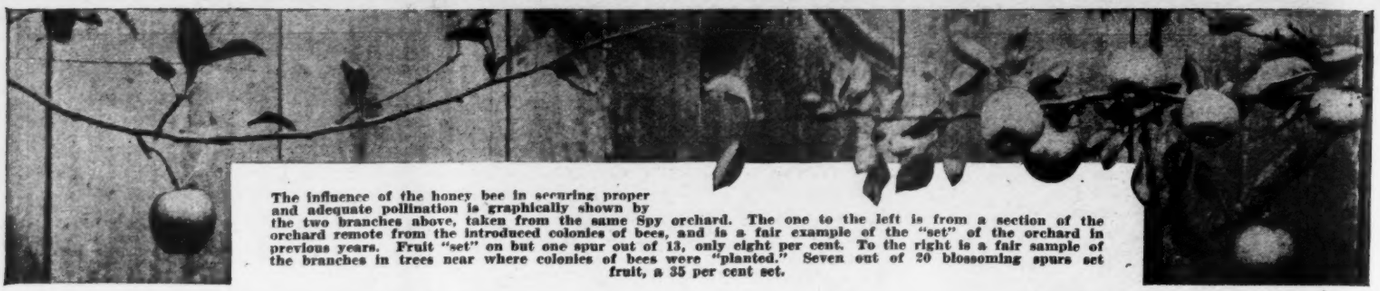
The approximate differences in size and grade of apples that may be expected from thinned and not thinned trees may be seen from Table 1 (page 28). The figures, as summarized by Gourley, are averages from 10 carefully conducted experiments in eastern and central states.

One can see from this table that the usual results of thinning are a marked increase in No. 1 fruit and a corresponding decrease in No. 2 and culls.

Such differences in grade may be and commonly are of considerable profit to the grower, as the results secured in Missouri, shown in Table 2 (page 28), will show.

Two points are brought out by this comparison of the value of apple thinning. In the first place, the crop of the 100 thinned trees was actually larger than of an equal number of not thinned trees. Secondly, as a result of thinning, the amount of No. 1 fruit was almost twice that in the non-thinned group, and the income was correspondingly greater. It must be emphasized here that the whole expense of thinning should not be placed against these trees, since most of the apples removed during thinning would have to be picked anyway and at a cost either equalling or exceeding that of thinning.

An erroneous idea seems to be [*To Page* 28]



The influence of the honey bee in securing proper and adequate pollination is graphically shown by the two branches above, taken from the same Spy orchard. The one to the left is from a section of the orchard remote from the introduced colonies of bees, and is a fair example of the "set" of the orchard in previous years. Fruit "set" on but one spur out of 13, only eight per cent. To the right is a fair sample of the branches in trees near where colonies of bees were "planted." Seven out of 20 blossoming spurs set fruit, a 35 per cent set.

Put the Honey Bee to Work Providing Pollen for Your Blossoms

Orchards in Extensive Fruit Growing Sections Frequently Suffer from Inadequate Distribution of Pollen. In Cold, Wet Springs the "Set" of Fruit Is Impaired. The Honey Bee, in Orchard Colonies, Insures Proper Pollination.

By H. D. Hootman

Michigan State College

BEES have long been known to be of value in pollinating plants; but just how far fruit trees are dependent on honey bees to pollinate their blossoms has not always been appreciated by fruit growers.

Many fruit growers have entertained a rather hazy impression that pollen is carried from one blossom to another, or from one part of an orchard to another, by the wind. This is not the case. Fruit pollen is moist. It is seldom, if ever, blown about by wind. Pollen transfer is carried on mainly by insects, especially honey bees. No other insect is so well adapted for this purpose. The importance of domestic honey bees as agents for pollination of fruit blossoms cannot be given over-emphasis.

A fruit grower sometimes asks himself the question, "Should I keep bees?" He often wonders if his fruit crops might not be measurably increased if colonies of bees were located in or near his orchard during the blossoming period.

To the average fruit grower, there are two ways to secure bees to pollinate fruit bloom. Many practical orchard men hire bees for the blossoming period, the usual price to the beekeeper being $5 per colony. Where an orchard is located in a good honey producing section, arrangements can often be made with a beekeeper to establish an apiary in or near the orchard for a nominal sum. The other alternative is to engage in the beekeeping business.

To succeed with bees, a man must have a special aptitude for the work. Most fruit growers at heart are not beekeepers. In numerous cases where the ordinary orchardist has attempted to keep bees, the colonies dwindle down until in two or three years they do not have any bees for pollination. This may be caused by lack of care or by disease, or may be due to the fact that in some fruit sections there are few honey plants for bees to work on after the fruit bloom is gone.

Some growers are already getting as heavy a "set" as is desired. Increasing the "set" would require thinning or better cultural practices if a crop of large sized fruit was to be produced. The individual tree has the capacity to produce and develop to maturity about so much fruit, and should the "set" greatly exceed this amount, the quality might be impaired. Most fruit men, however, prefer to thin a super-abundance of fruit than to run the risk of not having enough blossoms pollinated for a satisfactory crop.

Everyone has noticed how fruiting has been interfered with by bad weather at blossoming time. When bees are not flying and cross-pollination is not provided, a heavy "June drop" may be expected. The bees insure a crop of fruit. Due to their activity, the crop is increased, perhaps by 10 per cent, perhaps more.

Factors That Determine the Need of Bees

The location and size of the individual orchard are apparently the factors that determine whether or not bees are needed. Orchards not too large in size and with varieties well mixed, which are located near woods, swamps or uncultivated land where wild insects winter in large numbers, usually set a satisfactory crop without additional bees. As the conditions exist in commercial fruit sections where whole communities are engaged in fruit growing and where orchards have been planted by the square mile, the wild insects are wholly inadequate to pollinate effectively the vast expanse of bloom. It is in these locations especially that commercial fruit growers are largely dependent upon the domestic bee—the only insect admirably adapted for pollinating fruit bloom that can be readily controlled by man.

The crates indicate the location where three colonies of bees were placed during the blossoming season. Several substantial "bouquets" of Wagener and Ben Davis blossoms were placed in pails of water, 10 to 12 feet in front of the colonies. A 42 per cent set of Spy apples resulted.

In seasons when warm, sunny weather prevails during the blossoming period, the wild insects and what honey bees there are near an orchard have an opportunity to work many hours each day and will generally pollinate enough blossoms for a satisfactory crop. When cold, rainy weather prevails previous to and during the blossoming period, wild insects are of little value, and even the influence of honey bees cannot readily be observed for more than a few hundred feet from the location of the colonies.

Bees Exhibit "Flower Fidelity"

At the beginning of the fruit blossoming season, an orchard should be humming with bees. The showy petals of the flowers attract bees. In seeking the nectar, they crawl deep into the blossoms, their bodies becoming covered with the pollen from the stamens. In visiting other blossoms, pollen is rubbed off of their bodies onto the sticky stigmas, and thus cross-pollination is provided. Bees in collecting pollen and nectar are faithful as a rule to a single species of flower. This peculiarity of their nature provides for cross-pollination, and a waste of pollen is prevented. It also probably makes it possible for the bees to work more rapidly. They learn just where to stand and how far and in what direction to insert their proboscis to reach the nectary.

Move the Colonies Into the Orchard

To assure sufficient insect activity under adverse weather conditions at blossoming time, colonies of bees should be distributed through the orchard at the rate of one colony to the acre. Instead of adhering strictly to the rule of placing colonies 210 feet apart each way in the orchard (one colony to the acre) bee flight will be encouraged and better results obtained by locating the colonies in sheltered nooks or ravines away from windy, exposed locations. When the wind is blowing over 20 miles an hour, cross currents and eddies are created among the trees. These conditions are avoided by the bees and bee flight is thereby greatly reduced. Distributing the colonies through the orchard will provide for the most economical utilization of any flight that is made.

It has been estimated that 37,000 loads of nectar were required for the production of [To Page 24]

The Care of the Commercial Peach Orchard

In This Article, the Second of Three on Peach Culture, the Routine Work Is Planned, Covering the Operations of Soil Management, Pruning, Thinning, Protection from Rodents, and Harvesting and Grading the Peach Crop.

By T. J. Talbert

University of Missouri

PART II

THE YOUNG TREES should be given, during the spring and early summer, frequent and thorough cultivation by plowing and hoeing. It is usually advisable to continue cultivating after the trees come into bearing. If for any reason it is impractical to cultivate the entire space between the trees, hoeing or plowing a strip five or six feet wide about the trees will be of value. The best results, however, are usually obtained by cultivating the whole area between the rows up until about the first of July, when the cultivating should be discontinued to allow the trees to mature properly for winter.

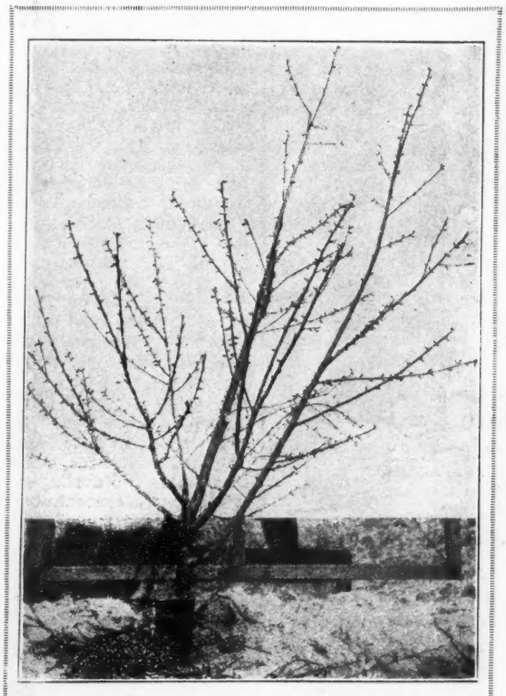
Where a vigorous growth is not being made, 10 or 12 shovelfuls of barnyard manure spread about the young trees, commencing a few inches away from the tree trunks, should be helpful. The application should be made early in the spring and worked into the soil by plowing and hoeing.

If barnyard manure cannot be obtained, use nitrate of soda or sulphate of ammonia, which may be applied in the spring at the rate of about one-half to one pound for trees one to three years old. For trees four to six years of age, one and one-half to two pounds may be used. These fertilizers should be sown broadcast in a circle around the trees on top of the soil about 10 inches away from the tree trunk. Since ammonium sulphate has a higher nitrogen content, use about three-fourths of the amount suggested for nitrate of soda. As the trees grow larger, the amount of the fertilizers may be increased and should be applied to the soil under the spread of the branches and between the rows. On soils lacking sufficient fertility to maintain a strong tree growth and profitable production, fertilization and cultivation are generally required every year.

Spraying and Pruning Young Trees

The foliage of young peach trees is not likely to suffer seriously from injury by diseases and insects that may be combated during the spring and summer. Summer sprays are therefore generally needed until the trees come into bearing and it is necessary to protect the fruit. Practically all young orchards are affected by San Jose scale and peach leaf curl. When this insect and fungous disease are present, a dormant spray should be made almost every year, applying it any time after the leaves drop in the fall and before any growth starts in the spring.

Pruning after planting generally consists of thinning out during the dormant season each year the branches which become too thick and heading back rangy branches. Some corrective pruning will be necessary in order to train and develop a well-balanced modified leader tree. The pruning for the first two or three years after planting should not be severe, as heavy pruning is likely to delay the trees coming into profitable bearing and have a dwarfing effect on them. The main problem in pruning young trees is to extend their framework and bearing surface. Stronger scaffold branches and more bearing surface may be procured by training the young trees to the modified leader system suggested for apple trees. It is important in pruning and training young trees that they be headed low and that the fruiting wood be kept near the ground in order that picking, spraying, and pruning operations may be facilitated. Low spreading trees are generally the most profitable as to yield.



A young peach tree after pruning and judicious thinning.

Protecting Young Trees from Rodents

To prevent rabbits from gnawing the trunks of the young fruit trees, wrap the base of the tree trunks from the ground to a height of about 18 to 20 inches, or the space between the ground and the lowest branches. Where the branches are less than 18 inches above the soil, the wrappers should include both trunk and branches to a height of about 18 to 20 inches. Various kinds of wrapping material may be used. Some of the most common are one-inch mesh poultry wire, galvanized window screen wire, galvanized wire netting having three or four meshes to the inch, old newspapers, gunny sacks torn in strips six to eight inches wide, and cornstalks. Wood veneer wrappers, patented wire wrappers, tarred paper and building paper may be bought and used. Trees are seldom attacked after they reach the age of four or five years.

Trash, litter, dead grass and weeds which may form a harbor for the meadow mouse should be kept away from the tree trunks. Where cultivation cannot be practiced on account of soil washing or for other reasons, hoeing a strip a few feet wide around the tree trunks to keep the space clear will help materially in preventing injury.

Pruning Bearing Trees

The amount and kind of pruning will depend largely on regularity of bearing. The total growth will be less where annual crops occur, and less pruning will, as a rule, be needed. Pruning suggestions may be briefly summarized as follows, where low winter temperatures and spring freezes are likely to occur: First, during bloom or after when danger of late frost is apt to be over, the trees should be pruned moderately, thinning out the branches throughout the tree sufficiently to admit sunlight and heading back the most vigorous new wood to a distance of about one-quarter to one-third of its length. Second, if the bloom is heavy, the pruning may be more severe, the thinning out greater and the heading back more general. Third, if the bloom is very light, in order to procure a crop, very little pruning should be given. Fourth, when there is no bloom as a result of low temperatures during the winter or for other reasons, the branches of the tree may be cut back to two-year-old wood. This will cause the trees to produce fruiting wood near the main trunk close to the ground. A vigorous growth of new fruiting wood should be produced for the next year. The height of the tree will also be lowered.

A combination of light winter heading and thinning done either at the same time as the heading or postponed until early in the summer, permits regulation of the size and shape of the tree and at the same time insures an open tree that allows sunlight to penetrate to the center, where it aids not only in the development of [To Page 27]

An orchard of old peach trees showing a vigorous profitable new growth, as the result of being cut back, during a "no crop" year, to one and two-year wood.

Excess Lime in Sprays and Dusts in 1927

The Results of Spraying and Dusting Experiments During the Past Season, when the Prevalence of Scab Fungus Put All Control Programs to the Acid Test.

By F. H. Ballou and J. P. Lewis

Ohio Experiment Station

PART II

THE MANY apple growers of Ohio who visited our first season's dusting experiments at Vincent, in southeastern Ohio, not only were intensely interested in but deeply impressed by what they saw. Indeed, this initial season's results were so favorable to dusting as compared with spraying, that there immediately arose a widespread demand for similar field work to be established in various parts of Ohio. However, funds from which to purchase additional dusting machinery and materials were not available.

Our department's one dusting machine was transferred to the Southeastern Test Farm, at Carpenter, where conditions were considered favorable for establishment of dusting work on a small scale, to be continued for a period of years. Arrangements were also made for dusting experiments in the large orchard at the "Tom Corwin Farm" in Jackson county—the power dusting machine being furnished by W. W. Ellenwood, superintendent as well as joint owner of the property. A third dusting experiment was planned for the young orchard at the Belmont County Farm where a partially home-constructed dusting outfit of really high efficiency was available for use. A fourth dusting project—the most extensive of its kind so far undertaken in Ohio—was planned for inauguration at Dale View Fruit Farm—the property of the author—in Licking county, where a modern self-mixing dusting machine, abundant dusting materials, new spraying machine, and spraying chemicals, and all necessary man and team service were available without cost to the experiment station.

The results of these rather extensive plans and preparations for beginning new projects in dusting in the year 1927, were not altogether successful or encouraging; for the severe freeze in late April left practically no apples on the trees in our Meigs and Jackson county projects.

In Belmont and Licking counties, perhaps 60 to 70 miles farther north, the apple trees were not quite in bloom when the freeze came, and the unopened fruit buds escaped injury. Upon these two dusting experiments, therefore, we concentrated our interest, work and study for the season of 1927.

Experiments Put to Severe Test

The past season, indeed, was generally considered as one in which apple scab was more prevalent, destructive and difficult to control than it had been for many years. Many orchard owners who sprayed with their usual formulas, practically lost their crops of apples—especially of those varieties most susceptible to scab infection. A number of more or less well sprayed orchards of Rome Beauty coming under my observation, were so full of scab that the foliage had nearly or quite disappeared from the trees at the time of apple harvest; and the fruit, much dwarfed in size by loss of foliage from the trees in summer and early autumn and terribly blemished and disfigured by both primary and secondary scab infections, was hardly worth picking.

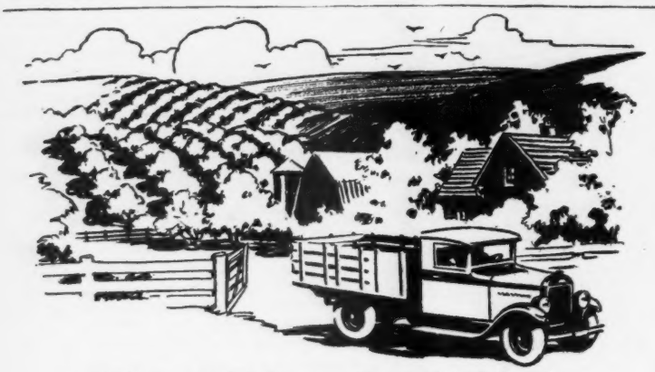
A new duster brought out in Ohio that is attracting much attention on account of its efficiency.

However, in spite of this almost country-wide and seriously destructive prevalence of apple scab, and of plum curculio and codling moth as well, the orchards in which our dusting and spraying experiments were in progress again came through with generous crops of as sound, clean, beautiful apples as we ever produced. The young orchard at the Belmont county experiment farm, embracing about 250 trees, yielded as its third consecutive crop over 500 bushels of Jonathans and Rome Beauty apples. The Jonathan, both dusted and sprayed, gave very nearly 100 per cent of fruit free from scab. This variety, it is true, is generally considered as one not likely to be infected by scab, although, as a matter of fact, it is not by any means immune from this trouble. So far as infestation by insects was concerned, at the Belmont farm, the dusted plots of Jonathan gave an average of 81.6 per cent absolutely free from any evidence of injury by plum curculio and codling worms, with an additional 8.8 per cent of fruit showing very slight defects from this cause, or a total of 90.4 per cent commercially free from insect injury. The sprayed plot gave 83.4 per cent wholly free from insect injury, with an additional 3.6 per cent of very slight defects from this cause, or a total of 87 per cent commercially free from insect markings. On the other hand, the undusted, unsprayed or "check" trees of Jonathans produced no apples that were free from insect infestation, and only 13.9 per cent of which were eligible, because of slight defects, to a commercial grade.

Rome Beauty plots at the Belmont farm, receiving dust treatments of from 80 to 90 per cent of superfine sulphur in the pre-bloom applications and not less than 45 per cent of sulphur for the after-bloom treatments, gave an average of 94.9 per cent of fruit entirely free from scab, and an additional 3.8 per cent of fruit so slightly scabbed that it was eligible to the first grade, making a total of 98.7 per cent commerically sound Romes from the dusted plots. The sprayed plot of Romes gave 94.7 per cent of fruit entirely free from scab, and an additional 5.2 per cent very slighly marked by this disease, or a total of 99.9 per cent commercially sound. This means that there was a difference of only 1.2 per cent of high grade fruit in favor of the spraying as compared with dusting. But how about the untreated or check plot of Romes? In this there was but 1.2 per cent of fruit wholly free from scab, and only 31.9 per cent of the product that was so slightly injured by this disease as to make it eligible to the commercially sound grade.

Eight applications of dust were given in the Belmont orchard, as follows: (1) Pre-pink; (2) pink; (3) calyx; (4) one week after bloom; (5) two weeks after bloom; (6) three weeks after bloom; (7) 10 weeks

(*Continued on Page* 22)



These Things You'll Find in Speed Wagons—

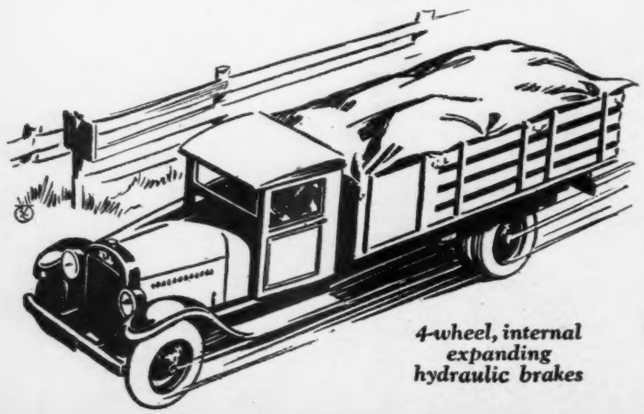
Speed—the 6-cylinder acceleration, the power to keep up a faster pace hour after hour, for transporting your perishable goods to market more quickly, and without risk of breakdown.

Safety and Riding Ease—to protect your products in transit. The 4-wheel internal hydraulic brakes of the new Speed Wagons are the best that modern engineering has produced. Speed Wagons are famous for their cradled riding smoothness. Chassis lubrication is *automatic*.

Economy—because Speed Wagons last longer, give you greater mileage output, and furnish sizes and capacities that fit your needs exactly.

Try out a new Speed Wagon—start it, step on it, stop it. A demonstration is yours for the asking.

REO MOTOR CAR COMPANY, *Lansing, Michigan*



4-wheel, internal expanding hydraulic brakes

SPEED WAGON

powered with 6-cylinder motors

The MIRACLE of MULCH PAPER

THE CENTURIES OLD PLAGUE OF WEEDS IS ENDED • • THE CENTURIES OLD CRY FOR MAXIMUM YIELD IS ANSWERED

THE MIRACLE of Mulch Paper—we've called this newest principle of farming—the MIRACLE of Mulch Paper!

For it IS a miracle to eliminate weeds and all the everlasting, time-stealing and back-breaking labor that weeds demand. It IS a miracle to increase the yield of varied products from 40% to 516%. It IS a miracle to move up the parallels of latitude, in a sense, and grow things two or three hundred miles further North than they ever grew before—grow things EARLIER than they ever grew before—and all at the expense of just so much MULCH PAPER.

And yet, this Miracle of Mulch Paper is available for your use today—under the well-known brand name, Gator-Hide.

• • • •

The principles of Mulch Paper are far beyond the experimental stage today. Its value is attested by statistics available to everyone. Statistics that show, for example, an increased yield in Mulch-Paper-grown spinach of 516%—in sweet corn of 279%—in sweet potatoes of 100%—in tobacco, cotton, beets, summer turnips, tomatoes and an almost unending variety of other farm products. The economic value of Mulch Paper has been established beyond all doubt. Mulch Paper is here to stay.

The Principles-in-Brief of Gator-Hide Mulch Paper

Gator-Hide Mulch Paper, made by the International Paper Company, the world's largest paper manufacturers, comes in rolls 18 inches and 36 inches wide and of 150 and 300 lineal yards.

Unrolled directly over the proposed plant beds and anchored by soil, or other available material, along its free edges, Gator-Hide Mulch Paper practically imprisons all moisture in the soil and gives it up in the form of stimulus to plant life rather than in the form of evaporation to the sun. Mulch Paper increases the temperature and the consequent bacterial activity of the soil both by conserving solar heat and by decreasing the cooling action that ordinarily results from evaporation. Planting is accomplished THROUGH openings made in the paper at suitably spaced intervals or BETWEEN strips of the paper. Thus, while space in plenty is provided for the growth of the plant, space is absolutely denied for the growth of weeds.

Available, for the Present, in Lots of Four Rolls Only

The supply of Gator-Hide Mulch Paper is limited and, with the idea of allowing the greatest number of planters to test its possibilities, we have decided, for the present, to limit individual orders to four rolls. Mail your order at once and shipment will be made C.O.D. to any office of the American Express Company. Gator-Hide Mulch Paper will be available, in the near future, through regular dealer channels.

In
TWO TYPES

Type A—for *Annuals*, primarily in field culture.
18" width—300 lineal yards to roll - - - - $3.00
36" width—300 lineal yards to roll - - - - $6.00

Type B—for *Perennials* in field culture and all garden work.
18" width—150 lineal yards to roll - - - - $3.00
36" width—150 lineal yards to roll - - - - $6.00

While only four rolls will be sold to the individual, *any combination* of four may be had.

INTERNATIONAL PAPER COMPANY
Department A2, Pershing Square Building, Park Avenue and 42nd Street, New York City

Write for Free Booklet
"The Miracle of Mulch Paper"
This booklet tells in an easily grasped way something of the history, the development and the possibilities of Mulch Paper. It is replete with comparative photographs of Mulch-grown and non-Mulch-grown products. It portrays the REAL *Miracle of Mulch Paper. Be sure to write for it.*

This paper is completely covered by the Eckert Patents under which the International Paper Company has the rights for production and sale east of the Rocky Mountains.

INTERNATIONAL PAPER COMPANY

She Noticed a Suspicious Light

An Advertisement of the American Telephone and Telegraph Company

One night a farmer's wife living near Elmer, New Jersey, noticed a suspicious light near her home. She suspected chicken thieves. Going to her telephone, she called the operator at Elmer. The operator notified a number of people attending a grange meeting there. A constable and posse went at once to the farm and caught the thief. He had nearly 3000 stolen chickens penned up near his place of residence. He was convicted and sent to prison.

The telephone serves the farmer in a thousand emergencies. Runs errands to town. Finds out when and where to sell at the best price. Brings the doctor in case of accident or sickness. Reaches the homes of relatives and friends. Pays for itself in money and convenience many times over.

The modern farm home has a telephone.

Inform Yourself About Home Conveniences

Do you follow the splendid plan of adding some Home Convenience every year? Unless you do, you are not giving yourself and your family the continually improved standard of living to which they and you are entitled.

Read over the list of Home Conveniences below. Check the ones in which you might be interested now. We will forward your inquiry to a few reliable manufacturers who will be glad to send you Descriptive Literature and prices, without obligation except that you will give serious consideration to the literature received.

Check the items. Write your name and address very plainly and send this coupon to:

Buyers' Service Bureau, American Fruit Grower Magazine,
53 W. Jackson Boulevard, Chicago, Ill.

Gentlemen: I am interested in the subjects checked below:

☐ Electric Lighting Plant, ☐ Carbide Gas Plant, ☐ Gasoline Lamps, ☐ Vapor Stove, ☐ Warm Air Furnace, ☐ Hot Water or ☐ Steam Heating System, ☐ Bathroom Equipment, ☐ Fressure Water System, ☐ Septic Tank Sewage System, ☐ Vacuum Cleaner, ☐ Power Washing Machine, ☐ Radio, ☐ Piano, ☐ Phonograph. ☐ Furniture, ☐ Floor Coverings, ☐ Paint, ☐ Varnish, ☐ Cold Water Paints.

Name .....

Address .....

Fruit Farm Beekeeping

By HARLEY F. WILSON

The Honey Crop

WHEN ONE has carried the bees safely through the winter and has given them every possible attention during the spring period, the season can be successful only when a good surplus crop of honey is secured.

Good management is just as necessary during the honey flow as at any other period of the year. Nearly every experienced beekeeper has a particular system of his own in which he has little manipulations not used by the beginner. However, the basic principles of securing a maximum surplus crop are the same in every case.

First, one must secure a large number of bees for each colony and prevent these bees from leaving in a swarm just previous to or during the gathering of the crop. If the beekeeper has been successful during the spring period, he should have from 15 to 20 pounds of bees, either in one large hive body or in two standard hive bodies. If in jumbo bodies, it is then necessary to add only the supers on top of the hive, and there should be at least three of these added to the colony just as the honey flow is beginning.

If the bees are in two standard 10-frame hive bodies, the two hive bodies should be separated, and this will necessarily mean that there must be a separation of the brood. The common practice in vogue at the present time is to leave the unsealed brood in the lower hive body and place the sealed brood in the upper hive body. After shifting the frames, the upper hive body should be set to one side and a queen excluder placed on top of the lower hive body which contains the queen. On top of the excluder, place two extracting supers with the second story of brood on top of them. This will immediately provide an abundance of storage room and will at the same time prevent that crowding of the bees which has a tendency to develop swarming.

Some beekeepers practice a variation of this method by placing one frame of brood in each of the two extracting supers, one above the other, so that there is a complete connection of brood between the bottom and the top sections of the brood chamber. There will undoubtedly be some queen cells started in the upper section of the brood chamber, but this is not a serious matter, and if the beekeeper desires, he may cut out the queen cells a week after this manipulation has been started. The brood in the top story will continue to hatch out over a period of 21 days for workers and a period of 24 days for drones, if eggs are present in worker and drone cells at the time the manipulation is made.

It is quite likely that the bees will fill the top chamber completely before the two regular extracting supers are filled. The upper section of the brood chamber, when filled and capped, should be put aside in the storehouse for the purpose of providing stores for the bees in the fall, winter and spring. And, if the beekeeper wishes to be really successful, he will adopt the practice of not figuring this as surplus crop, but will take for his surplus only that portion produced in the regular extracting supers.

The bees should be examined from time to time during the honey flow and if there are not at least one-half dozen frames in which no honey has been placed, extra supers should be added until near the end of the honey flow.

Every beekeeper will soon gain the experience whereby he will be able to distinguish the coming of the end of the flow. And, even though he does not, it is better to have too much room than not enough. Do not remove unsealed honey until it is thoroughly ripe.

A Unique Honey House

THE ACCOMPANYING photograph shows one of several bee houses owned and operated by F. J. Mongin of Green Bay, Wis. The house is built in the shape of a hexagon, and will accommodate 28 colonies. There is ample space inside for manipulating the bees and tiering up the supers. In addition, there is room at the center of the house for extraction and storage of honey.

Mr. Mongin uses long-idea hives, each one containing 20 Langstroth frames. Two Langstroth 10 frame hive bodies, resting side by side, are used as supers.

Such a building is cheap, saves labor, and affords an opportunity of working with the bees on rainy days.

Starting Bees from Nuclei

THERE ARE many amateur beekeepers making a start each year, and naturally the first question they will ask is, "How and where can we secure bees?"

Probably the easiest method would be to buy package bees from southern breeders. The bees come in packages containing one, two, three, or four pounds, with queen, and these can be made to arrive at the most advantageous time in the spring, which is about May 1. In the northern United States, after the start has been made,

the next question is how to enlarge the apiary without buying more bees.

The process is simple and is easily accomplished. With careful attention to simple details, the beekeeper should be able to double the size of his apiary in any one year, without much loss of surplus crop on the original colonies. The best method is to start at the time when the brood is being shifted at the beginning of the honey flow. Three frames of hatching brood with a well developed queen cell or with a queen from the original colony will develop into a strong colony by the beginning of the winter period, provided they have sufficient stores for rearing brood.

In starting the nuclei, prepare a single story hive containing 10 brood combs or full sheets of foundation. When separating the brood in the two sections of the brood chamber of the original hive, remove three combs from the new hive and replace them with three frames of brood taken from the old hive. The frames taken from the new hive can be inserted in place of the frames of brood in the old hive. If sufficient nectar is coming in from the fields, the bees will need practically no further attention until after the honey flow. If sufficient nectar is not available immediately, the newly started nuclei should be given a good supply of sugar syrup. In the fall, the nuclei should be supplied with sufficient stores to keep them rearing brood until late in the fall, and also to provide for the winter.

If the beekeeper wishes to do so, he may send for queens so that they arrive just at the beginning of the honey flow, and if all queen cells are destroyed, it will be a simple matter to introduce a queen into each nuclei. If the beekeeper does not wish to buy queens, they may be reared, either in the nuclei or in the old colony. In this case, it is probably best to put the old queen in the nuclei, allowing the original colony to attend to the queen rearing. If the old colony is allowed to rear the queen, it is absolutely necessary that an abundance of room be maintained in each colony, or there will be some danger of a swarm leaving with the virgin queen.

Importance of Good Frames

MODERN beekeeping methods demand a complete elimination of poor combs, both for brood-rearing and honey storage. Poor combs in the brood chamber are costly. For many years, the manufacturers of comb foundation have been trying to develop foundation that would not sag and on which the cells will keep the original shape as built out by the bees. It is just as easy to have first-class combs as it is to have poor ones, but the beekeeper must learn to follow out a process of elimination every year that will keep the number of poor combs down to a minimum. Full sheets of foundation should always be used as starters. Although comb foundation has now been devised which does not require cross-wiring, one or two cross wires will be found desirable, to prevent possible dropping out or breaking of the combs during extracting. A good comb is one that is built clear to the side and bottom bars. Combs not fairly attached at the bottom are bound to sag. As the comb sags, the cells at the top of the comb become distorted, and the bees will not use them for brood-rearing. The space in the brood-rearing chamber will, therefore, be greatly diminished. Under these conditions, no colony can carry on brood-rearing to the maximum point. Also, great care should be taken to reduce the number of drone cells in the brood chamber to a minimum of not more than 200 or 300 cells per frame, otherwise there will be a great deal of energy and honey wasted in the rearing of unnecessary drones.

When Shall I Spray for Codling Moth?

THE APPLE-DESTROYING codling moth has long been considered a pest of settled habits which worked with deadly efficiency on a routine schedule that could be counted upon with as much certainty as the average railway time table. And if a season passed when serious damage was caused by the moth in spite of heavy and regular spray applications, the apple grower merely sighed and blamed his spraying method or the arsenical poisons used and hoped for the best when another season rolled around.

But finally one or two experiment stations began to get curious and asked themselves a few questions. Why does spraying prevent codling moth damage some years and not others? Is the life of the moth lived in a regular cycle? Does the trouble lie in weak and inferior arsenicals? Do we really know when the moth emerges and does its damage?

And in the last question lay the answer. After two years of heavy damage from the codling moth, the Missouri Experiment Station set about establishing breeding cages to determine what part the irregularities in the development of the pest might play in the epidemic. Last year most of the apple blossoms were off the trees by April 25, and the calyx spray was completed before the last of the month. Under normal conditions, the grower would have expected moths on the wings by the first days of May and the cover spray for young worms would have been completed before May 10. Where a second spray was applied, it would have been completed by May 20, completing the spray program for the majority of apple growers.

But what really happened, showing that the codling moth is evidently off its normal cycle, was this: The first moth at the Columbia station emerged May 21 and the peak was reached June 4, with the first entrance of worms of importance occurring on June 12. Thus growers without breeding cage records would have completed their spraying for first-brood worms before the moth emerged and three weeks before the worms began to enter the fruit in any number, practically nullifying the effect of the sprays which were applied at the usual specified time.

Apple growers will insure themselves against probable loss from wormy fruit during the coming season if they will keep in close touch with their state experiment stations to determine the actual date of codling moth emergence. Where it is not practical or convenient to keep in touch with the station, the grower can establish breeding cages in his own orchard and determine the proper time to spray. When the moth emergence date is actually known, the regular series of high pressure sprays applied at the customary intervals will insure a crop of worm-free apples.

He Plows a *Surprising Acreage*...
Controls *Abundant Power* at the *Belt*

Because

His McCormick-Deering is a 15-30 Tractor

THIS man has not made the mistake of underpowering. He rides big-capacity power and he farms and profits in proportion. In these days of big machines, broad operations, high labor costs, and changing needs, he has wisely gone *all the way* in his power investment. He owns the big McCormick-Deering—the 15-30.

The *extra* power of the 15-30 (50 or 100 per cent more power at your command than with the usual 2-plow tractor) will give you extra advantages on a score of jobs the year around. Remember, it is a triple-power tractor, with power delivery through the drawbar, belt, and power take-off. Take the big job of plowing—the 15-30 McCormick-Deering will turn your fields at surprising speed. Three furrows and up, per round, depending on soil and depth. That labor-saving speed goes for all field operations—tillage, grain and corn harvesting, etc.

Then, in the operation of belt machines, nothing can equal the abundant smooth flow of power furnished by the 15-30 McCormick-Deering. Generous capacity for the *larger* threshers, ensilage cutters, shellers, grinders, etc. Remember that in this tractor you will own the *modern 4-cylinder power plant* for which McCormick-Deering is famous. That means vibration cut down, smooth and even belt operation, and long life for both tractor and machines. Governor-control, too, works on your side every minute. No chains needed in power transmission, all shafts in true alignment, gears always in full mesh.

The 15-30 McCormick-Deering puts more power, more accomplishment, in one man's control. It is built for many years of economical operation. It is ready for your peak loads, for new machines you will buy in the future, and for the greater acreage you may want to farm. See the 15-30 McCormick-Deering at the dealer's store. He also can show you the 10-20 McCormick-Deering and the Farmall.

Farmall and 4-Row Cultivator

This general-purpose tractor is designed for row-crop handling as well as for belt work, etc. Many farmers own a Farmall and also a 15-30 for the heavier drawbar and belt work.

INTERNATIONAL HARVESTER COMPANY
606 So. Michigan Ave. OF AMERICA (Incorporated) Chicago, Ill.

McCORMICK-DEERING

"Handy men" on the farm

GREATEST handy men you ever hired. Always ready to work, to put their backs into any electrical job. Never a growl, not a grunt. They take no time out for sleep or meals. And when you let them rest, they restore their energies, getting ready to hop right back to duty when you close the switch. Great for ignition, on tractors, trucks, stationary engines. Will run doorbells longer than you'd ever suppose if you have never used these powerful, long-lasting batteries—Eveready Columbias. The Eveready Columbia Ignitor is the standard six-inch dry cell, 1½ volts. For use indoor or in completely protected battery boxes. For trucks, tractors, firing blasts, outboard motors, and in any exposed places, use Eveready Columbia Hot Shots. Three sizes, 6, 7½ and 9 volts, each in a water-proof steel case.

NATIONAL CARBON CO., Inc., New York—San Francisco

Unit of Union Carbide UCC *and Carbon Corporation*

EVEREADY COLUMBIA Dry Batteries -they last longer

FOR RADIO

The only way we can beat the Eveready Columbia is to make a special cell for one specific use. That's what we have done in the Eveready Dry Cell Radio "A," No. 7111. Made specifically for use on radio sets using dry cell tubes, and superior in that service.

Prepare NOW for the Fruit Harvest

MORE MONEY from your fruit can be secured in two ways: (1) By **Saving Time and Labor** by the use of labor-saving equipment in harvesting and packing; and (2) by marketing your fruit in the **Most Attractive** style and package.

In most cases the economy in time and labor will pay for labor-saving equipment in a single season—and leave an extra profit.

ATTRACTIVELY GRADED AND PACKAGED FRUIT ALWAYS PAYS AN EXTRA PROFIT.

Let us put you in touch with manufacturers of the following lines, who make a business of increasing fruit growers' profits.

Check the items upon which you wish information. (No cost. No obligation except to give serious consideration.) Send it TODAY to

BUYERS' SERVICE, BUREAU, American Fruit Grower Magazine, 53 West Jackson Blvd., Chicago, Ill.

☐ Berry Boxes, ☐ Bushel Baskets, ☐ Less-than Bushel Baskets, ☐ Boxes, ☐ Fiber Cartons, ☐ Special Packages for ....., ☐ Orchard Ladders, ☐ Pick-up Wagons, ☐ Fruit Picking Devices, ☐ Picking Sacks, ☐ Grape Picking Shears, ☐ Cherry Pickers, ☐ Fruit Grading and Sizing Machines, ☐ Fruit Cleaners, ☐ Box Presses, ☐ Barrel Presses, ☐ Basket Facers, ☐ Barrel Facers, ☐ Basket or Barrel Liners, ☐ Oiled Paper Wraps, ☐ Lithographed Labels, ☐ Insulating Material for Cold Storage.

Name .....

Address .....

The Market Review

By PAUL FROEHLICH

United States Bureau of Agricultural Economics

GROWERS of apples and citrus fruit are looking back over the 1927-28 season with considerable satisfaction. Lighter crops were of financial benefit to many, though the grower who had practically no fruit doubtless suffered financially. Prospects for the coming season are receiving attention, and various plans are under way for improved marketing and distribution of the expected heavy crops. Strawberries hold the center of the stage during the next two months. The berry crop generally is in good condition; shipments are expected to show heavy volume, and prices may range somewhat below those of 1927.

Active Strawberry Season

Shipments of strawberries were rapidly increasing during the latter part of April, though total volume was not equal to that of a year ago because of the later season. May usually is the month of heaviest berry shipments. Ordinarily, at least 7000 cars move during May, and last season almost 10,000 cars were rolled to city markets that month. In a normal season, the June output totals 4000 or 5000 cars. Most markets also report lowest average prices of the season during June, when the carlot supply is augmented by liberal receipts of home-grown berries. Usually, there is a fairly prominent peak of carlot shipments about mid-May, when Arkansas, Tennessee and Virginia are active. This is followed by a slight decrease, and then a second and greater peak occurs about June 1, when shipments from Missouri, Maryland and Delaware are heavy. By the end of June, the active season is nearly finished, and only the light supplies of late berries remain to be marketed. Most of the late crop is hauled to nearby consuming centers.

Distribution of strawberries by motor truck is becoming increasingly important. A considerable portion of the southwestern Michigan crop is hauled to Chicago and other markets. North Carolina berries have been trucked to distant cities north of that producing section, and more than one-fourth of the crop on the peninsula of Virginia, Maryland and Delaware moves out by motor vehicle. Markets like Philadelphia, Newark and New York receive hundreds of carloads by truck from the Eastern Shore section. In 1926, this peninsula forwarded 1140 carloads of strawberries by truck, in addition to 2600 straight cars by rail, 200 carloads in less than carlot express shipments, and 155 carloads by boat. Fruit hauled by truck usually arrives in good condition, as the crates are subject to less handling than by rail or boat transportation.

Production Increasing

Following the big crop of 318,000,000 quarts of strawberries in 1924, production the next season was reduced by nearly 30 per cent. In 1926, however, the outturn had again increased to 278,000,000 quarts, and last year 342,000,000 quarts were grown in the commercial strawberry areas. This high total was caused partly by unusually high yields in certain important states and was attained in spite of a spring freeze in the Ozarks and considerable damage from flood waters in the Mississippi Valley. Average yields per acre for the United States have ranged between 1575 quarts and 1825 quarts during the last four years.

Even in the earlier shipping sections, production is uncertain because dependent on weather and similar factors. Assuming favorable growing conditions in four early states (not including Florida), the indicated average yield is above 1600 quarts, compared with 1010 last year. Yields in Louisiana may be double those of 1927, and a crop of 37,000,000 quarts is in prospect in that state. Alabama may have 9,000,000, Texas 3,300,000, and Mississippi 1,800,000 quarts. A possible total of 51,000,000 quarts in these four states would be almost twice their combined production of last season. Texas is becoming increasingly important as a strawberry state. Florida's crop was about one-third lighter than in 1927. Prospective production in six second-early states is 105,500,000 quarts, or 10,500,000 more than last year.

Alabama berries started moving the first week of April. The Louisiana crop was coming along nicely, and some local operators are expecting total shipments of 2500 cars, compared with 1660 last season. Prices on the Hammond f. o. b. auction opened at the high average of $5.50 per 24-pint crate, or nearly $4000 per carload. The market quickly declined, however, and by April 10 an average of $3.25 prevailed. Auction level this season has been continuously lower than a year ago. City dealers also were quoting moderate prices.

Variation in Prices

The average price per quart of strawberries on farms in 1924 was 14 cents, varying from nine cents in Delaware and Maryland to 27 cents in Florida and Louisiana. Under the lighter production in 1925, the average farm price advanced to 18 cents per quart, but in 1926 it declined to 17 cents and in 1927 to 15 cents a quart. In Oregon, where much of the crop is packed in barrels for manufacturing purposes, low price of eight cents was recorded in 1927. Highest prices last year were reported in Florida, California, Louisiana and Mississippi. Growers in Florida averaged top price of 29 cents per quart. Total estimated farm value of the commercial strawberry crop in 1927 was about $50,000,000, the heavier production compensating for the lower average price per quart. The relatively light crop of 229,000,000 quarts in 1925 was valued at only $40,000,000, even though the average price per quart was highest of the last four years.

A special seven-paged summary entitled "Strawberries in 1928," is now available from the Bureau of Agricultural Economics, Washington, D. C. This was released on April 5, and combines a discussion of the season's prospects with numerous statistical tables.

Western Fruit Damaged

Heavy rains and flood waters have taken their toll of fruit in California. As a result of the breaking of the dam in Santa Paula Valley, nearly 1000 acres of orange trees and about 100 acres of lemon trees were seriously damaged. Almost 300 acres of apricots also were included in the flooded area. Rains and strong winds in the Hayward and San Jose districts

caused much damage to the important apricot acreage. Some local estimates indicate fruit losses amounting to 50 or 60 per cent. Other deciduous fruits also must have suffered to some extent. In El Dorado county, it is reported that eight inches of rain fell during a six-day storm in late March, followed by snow in the upper levels.

In the peach and apple regions of southeastern United States, crop prospects continued good. No damage from cold weather had been reported by early April. Large numbers of diseased or unproductive peach trees have been removed, particularly in the section south of Fort Valley, Ga., but the main crop probably will not be materially affected. Citrus fruit conditions in Florida were variable. Severe storms had come close to the important fruit belt of the Middle West. Peaches in northern Texas gave promise of a good crop, following the very light production of last season.

Florida Citrus Season

Shipping movement of Florida citrus fruit was decreasing week by week, and only a few thousand carloads remained to be marketed. Quality was varying according to the bloom, and shipping-point prices tended slightly downward after highest marks of the early part of the year. Last government reports from Orlando showed Marsh Seedless grapefruit ranging $4-4.25 per box, with Duncan variety 25 cents below Marsh Seedless. Valencia oranges ruled $5-5.50. Movement of California oranges was quite heavy.

The third direct boat shipment of Florida citrus fruit from Jacksonville to Liverpool, England, arrived in good condition on March 18, after a four-weeks' voyage. The cargo consisted of 4600 boxes of grapefruit and about 1000 boxes of oranges. Most of the grapefruit was of excellent quality, but the cargo included too great a percentage of low grade fruit. The British market was strong, when this shipment arrived, and best Florida grapefruit sold at $6.80-$8 per box.

Fresh Fruit Exports

Exports of fresh fruit from the United States during 1927 were valued at $60,000,000, approximately $7,000,000 in excess of such exports in 1926 and practically double the value of the foreign shipments during 1923, according to the Department of Commerce. Heavier exports of oranges and grapefruit account for most of the 1927 increase, the value of orange shipments being $3,600,000 more than during 1926, while value of grapefruit exports increased by more than $1,500,000. Apples constitute the principal fresh-fruit exports, having a value of $30,000,000 in 1927, while oranges came next at $15,000,000. Other exports were: Pears, $3,800,000; grapefruit, $3,300,000; grapes, $2,000,000; lemons, $1,500,000; berries, $1,100,000; peaches, $777,000; pineapples, $221,000; and "other fresh fruits," $1,900,000. Figures show an increase in oranges of 900,000 boxes; grapefruit, 350,000 boxes; grapes, 4000 tons; berries, 2,300,000 pounds; and peaches, 69,000 bushels. Boxed-apple exports decreased by 50,000 boxes and pears by 241,000 boxes. Exports of boxed apples in 1927 were 6,400,000 boxes, and barreled apples were 3,042,000 barrels.

It is realized that export shipments of a product like apples do not present an entirely true picture on a calendar-year basis. The 1927 apple exports include part of the heavy 1926 crop and part of the light 1927 crop. Total exports from United States and Canada for the present season to the end of March were about 2,000,000 barrels and 5,000,000 boxes. This is about two-fifths as many barrels and two-thirds as many boxes as were exported from the two countries by the same time last year.

Apple Season Waning

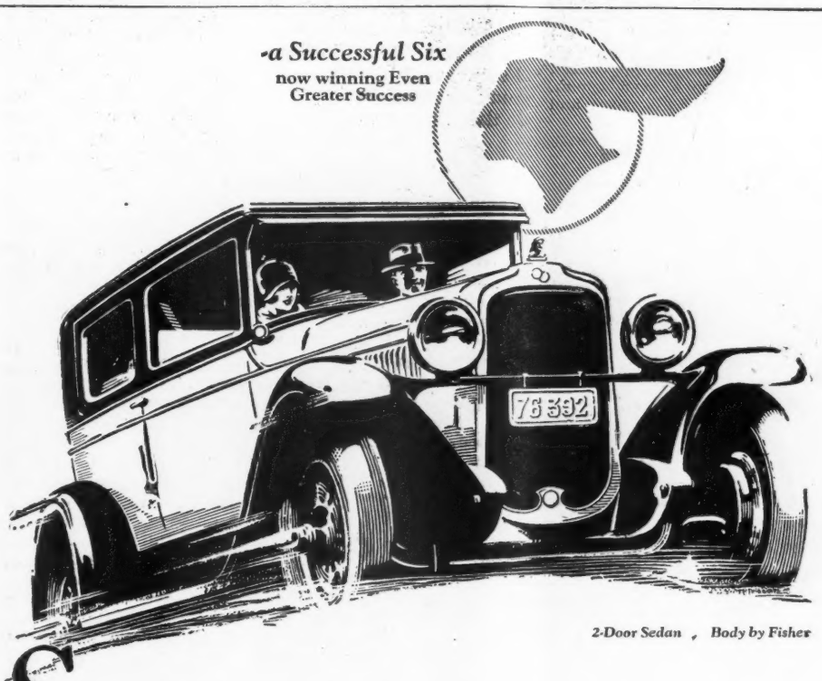
Storage supplies of apples were fast diminishing. Much of the fruit—especially eastern stock—is showing scald, and f. o. b. prices of Baldwins in western New York declined slightly during recent weeks. City market prices were fairly well maintained at more than double the level of a year ago. Some slight advances occurred during the month. Western boxed apples were meeting a good demand at satisfactory prices. Holdings in the Pacific Northwest are light. Total apple shipments by early April were around 90,000 cars, compared with 128,000 by April 1, 1927, and possibly not more than 5000 cars were yet to be shipped. Attention is already being centered on crop prospects for 1928.

Yellow varieties of American apples were commanding high prices on the Liverpool, England, auction. Best Virginia stock averaged $12 per barrel, and Oregon Yellow Newtowns sold as high as $4 a box. New York Baldwins were bringing $9 a barrel. Some of the western fruit was not in good condition. Fresh supplies were arriving actively from New Zealand and Australia. One recent report indicated 650,000 cases due to arrive during April. The German apple market had improved, as European supplies decreased.

Cold Storage Holdings

Movement of apples out of cold storage during March was not so heavy as the corresponding movement a year ago. Withdrawals of barrels were about two-thirds lighter and withdrawals of boxes one-fifth lighter than during March, 1927. Stocks remaining in commercial cold storage houses on April 1 were 502,000 barrels, 4,882,000 boxes and 900,000 bushels.

-a Successful Six
now winning Even Greater Success



2-Door Sedan , Body by Fisher

Showing to *Greatest Advantage* where driving conditions are *most trying*

Characteristic of the New Series Pontiac Six is the fact that its upstanding reliability and all-around mechanical quality enable it to show to best advantage where driving conditions are most trying.

$745
2-DOOR SEDAN

On farms off the paved highways—in localities farthest removed from service stations—wherever a car must possess an abundance of stamina to provide dependable transportation . . . that's where the Pontiac Six is revealing its vast superiority over every other low-priced six.

The reasons are obvious. Developed originally on General Motors Proving Ground, the Pontiac Six embodied the ability to conquer the most pitiless conditions of weather and roads before it was evenoffered tothepublic. And since its introduction, it has been constantly improved mechanically until now it is not only the staunchest of low-priced sixes, but the most modern in design as well.

Living where driving conditions are more exacting than they are in the city and where unfailing reliability is far more important, you want the greatest stamina and dependability your money will buy. If you're paying within a hundred dollars of $745, be sure to inspect and drive the New Series Pontiac Six.

Coupe, $745; Sport Roadster, $745; Phaeton, $775; Cabriolet, $795; 4-Door Sedan, $825; Sport Landau Sedan, $875. Oakland All-American Six, $1045 to $1265. All prices at factory. Delivered prices include minimum handling charges. Easy to pay on the liberal General Motors Time Payment Plan.

OAKLAND MOTOR CAR CO., PONTIAC, MICHIGAN

PONTIAC SIX

PRODUCT OF new series GENERAL MOTORS

Chats with the Fruit Grower's Wife

The Arrangement of Flowers in Beds and Borders. More Recipes for Using Fruit. Kitchen Comfort in Hot Weather for June.

Fruit Recipes

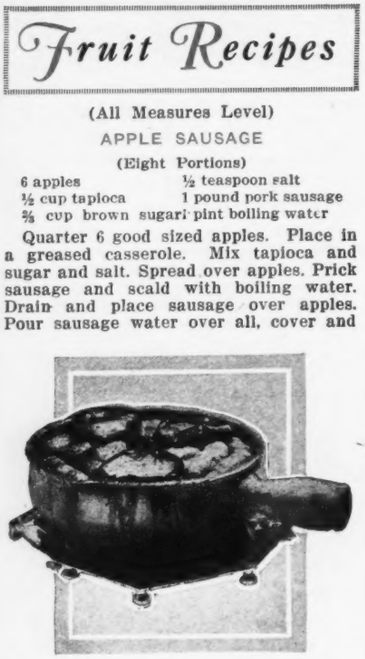
(All Measures Level)

APPLE SAUSAGE

(Eight Portions)

6 apples
½ cup tapioca
⅔ cup brown sugar
½ teaspoon salt
1 pound pork sausage
1 pint boiling water

Quarter 6 good sized apples. Place in a greased casserole. Mix tapioca and sugar and salt. Spread over apples. Prick sausage and scald with boiling water. Drain and place sausage over apples. Pour sausage water over all, cover and



bake in moderate oven, 350 degrees Fahrenheit, 45 minutes, until apples are soft.—(Courtesy Minute Tapioca Company.)

APPLE SAUCE CAKE

1 cup brown sugar
1½ cups applesauce (sweetened)
1 level teaspoon soda
1 cup raisins
1 cup chopped nuts
½ cup butter or meat drippings
2½ cups flour
1 teaspoon each cinnamon, cloves and nutmeg
1 level teaspoon baking powder

Cream sugar and shortening, add spices, add flour, soda and baking powder sifted together. Then add nuts and raisins. Mix all very thoroughly together. Lastly add the apple sauce. Be careful to have a stiff batter. Bake in a loaf in a slow oven. This cake may be warmed and used as a pudding with hard sauce. —(Courtesy Calumet Baking Powder Company.)

FRUIT BAVARIAN CREAM

(Six Servings)

1 level tablespoonful gelatine
¼ cup cold water
1 cup fruit juice and pulp
1 tablespoonful lemon juice
½ cup sugar
1½ cups heavy cream, beaten until stiff
Salt

Soak gelatine in cold water 5 minutes,

and dissolve by standing cup containing mixture in hot water. Strain into fruit juice mixed with lemon juice. Add sugar, and when sugar is dissolved set bowl containing mixture in pan of ice water and stir until mixture begins to thicken; then fold in cream. Turn into wet mold, and chill. Use canned pineapple, fresh or canned strawberries, raspberries, peaches or any preferred fruit.—(Courtesy Charles B. Knox Gelatine Company, Inc.)

By Hazel Bursell

FROM LETTERS received by this department it is evident that considerable interest is being taken in the fruit recipes taken from the literature of manufacturers of food products. This month we print another selection, and will publish others from time to time as space permits. In the June issue we plan to devote a good deal of this page to the important subject of "Kitchen Comfort During Hot Weather." Everyone will agree with me, I believe, that there is no reason in the world why any woman, on a modern fruit farm, should sizzle and roast over an old-fashioned wood or coal-burning range. Not with the wide variety of convenient oil and vapor ranges from which a selection can be made. The berry harvest is beginning,—it has begun in the South. During the next two months the strawberry money will be coming in. A cool, comfortable kitchen will make its influence felt. Next month we will take a few representative oil and vapor ranges "apart," consider their respective advantages, and each housekeeper will make her own choice of the range she wants. And there are ways of getting what we want.

The Fruit Recipes and Summer Comfort in the Kitchen

LAST month we discussed thrifty and profusely blooming annuals, touching on selection, offering a list of suggestions, and giving instructions for the planting of seeds in the seed beds. This month we are going to talk about the arrangement of plants when transplanting into the regular borders and beds, so as to achieve the best possible effect throughout the season. In order to accomplish this, we are compelled to plan our arrangements on paper in advance, taking into careful consideration the following six points: (1) Size and shape of flower bed or beds; (2) height to which plants grow, and general shape of plants (whether creeping or upright); (3) usual period of bloom; (4) color and size of flowers; (5) whether plants do best by themselves or in mixed beds; (6) whether plants like a shady or a sunny location.

Arrangement of Flower Beds and Borders

The size and shape of the flower beds is the determining factor as to what to plant in the various beds and arrangements. For instance, a rock garden, which is very effective for a terraced or sloping lawn or as an ornamental planting to beautify the steps leading up to the house, requires for the most part low, creeping plants. Plants of this type include sweet alyssum, sand verbena, portulaca, ice plant, California poppies, pansies, violas, Iceland poppies, dwarf marigolds, annual dianthus or spice pinks, forget-me-nots, love-in-a-mist, and vincas or periwinkles. In very large rockeries, such plants as the petunia, trailing nasturtium, lupine, columbine, snapdragon, evening primrose, wall flower, annual phlox, salvia, scabiosa, godetia, and aster are appropriate (Note.—We have mentioned only annuals together with a few perennials in this connection. In reality, many bulbs and other types of plants may properly find a place in the rock garden.)

FOR oblong beds or "borders," as they are called when planted with the dwelling or a fence or hedge as a background, a certain system is followed—the edge is outlined with a border of low, trailing plants of one kind and color, then one or more rows of small (12 to 15 inches tall) more or less upright plants of several types and colors with the types grouped and the groups alternating, then a row of medium height plants, some of them bushy and others more tree-like, and finally one or more rows of the very tall ones to form the background. For round beds, the arrangement is simple. The center of the bed is planted to tall flowers and the border is outlined with one or more rows of lower plants suitable in color for the particular bed. The same principle would apply to crescent shaped beds.

Suitability of Plants as to Height and Color

We shall discuss points (2) and (3) together for the sake of convenience. We shall begin with border plants, those growing to a maximum height of seven or eight inches and producing the massed effect needed for borders. This group includes much the same plants as those in the first rock garden group mentioned above, though some of them are more suitable for beds and borders than are others.

Sweet alyssum is one of the best of the border plants—it grows fast, starts blooming early and flowers all summer. Its fragrant white blossoms make a showy, compact border about 12 inches wide as it reaches its full growth, and it is very easily grown. Eschoscholtzia or California [*To Next Page*]

Fruit Recipes

(All Measures Level)

FRUIT COMPOTE

(Six Servings)

1 package strawberry or cherry gelatine
1 cup boiling water
1 cup stewed or canned fruit juices
1½ cups mixed stewed or canned fruit (peaches, pears, prunes, apricots or any combination desired)

Dissolve strawberry or cherry gelatine in boiling water; add fruit juice. Cool; when it begins to thicken slightly, add

fruit cut into pieces. Mold in large or individual molds. Chill until very firm. If large mold is used, the whole fruits, stoned, make a very attractive dish. Raisins instead of prunes make a good combination with the other fruits.—(Courtesy Royal Gelatine Company.)

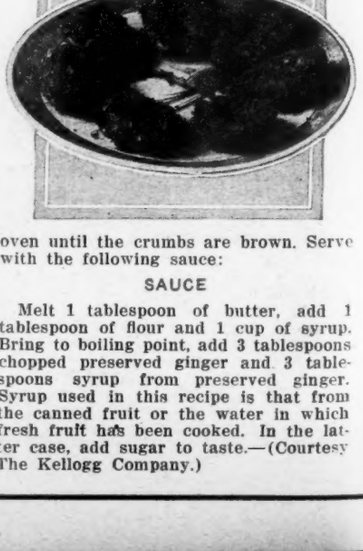
PEACH DESSERT

1 package strawberry gelatine
1 cup boiling water
1 cup cold water
1 can halved peaches

Dissolve gelatine in boiling water; add cold water. Chill. Drain syrup from peaches. Place peaches with cut side down in muffin pans or in individual molds and pour over each the gelatine mixture to just cover the peaches. Chill until firm. When ready to serve turn out on plate; fill hollow of each peach with whipped cream.—(Courtesy Royal Baking Powder Company.)

PEARS AU GRATIN

Either canned or fresh peaches or pears may be used. Fresh fruit should be cooked in water until tender. Drain 6 halves of pears and roll them in rolled corn flake crumbs. Place in a pan and dot with pieces of butter. Bake in hot



oven until the crumbs are brown. Serve with the following sauce:

SAUCE

Melt 1 tablespoon of butter, add 1 tablespoon of flour and 1 cup of syrup. Bring to boiling point, add 3 tablespoons chopped preserved ginger and 3 tablespoons syrup from preserved ginger. Syrup used in this recipe is that from the canned fruit or the water in which fresh fruit has been cooked. In the latter case, add sugar to taste.—(Courtesy The Kellogg Company.)

poppy also makes a fine looking low border. It may be had in yellow, in pastel colors, or in mixed colors. It is easily grown, has pretty foliage as well as blossoms, and blooms continuously from June until frost. Seed must be sown where the plants are to remain.

Forget-me-nots make beautiful borders, but they cannot be depended on to bloom throughout the entire season as can those mentioned above, though they will serve quite well.

Portulacas come in many wonderful "coppery" and rose colors, with the blossoms similar in shape and size to wild roses. Their chief disadvantage is that the seeds do not always germinate readily, and that a quantity of seed must be planted in order to achieve a showy border. The seed should be sown where the plants are to remain.

Pansies and violas (the latter a relative of the pansy) make charming and showy borders, but in order to secure the largest, most velvety, and most delicate colored flowers, they should be grown in the shade or semi-shade.

Dwarf marigolds make good borders for the coarser flowers, such as cannas, dahlias, chrysanthemums, and zinnias, but they are not usually so pretty for mixed beds of the daintier flowers.

Next Height Discussed

Flowers coming in the next height group include the vinca or periwinkle, godetia, love-in-a-mist, annual sweet William, feverfew, cynoglossum, gilia, diascia, balsam, candytuft, and dwarf ageratum. Several types may be planted in alternating clumps of several plants of any one type.

The vinca is a thrifty growing, attractively flowered annual and grows in a compact bush to a height of about 15 inches. It blooms profusely during summer and fall. The seed should be sown where the plants are to remain and the plants thinned to six inches apart. The godetia or satin flower is much like the vinca in height and appearance, so a choice should be made between the two for any one bed or border.

Love-in-a-mist is a dainty blue flower set in a misty head of foliage. If the seed is picked off as it forms, this plant will keep on blooming for several months. It is a quick growing annual, blooming in from eight to 10 weeks after planting. The seed should be sown where the plants are to remain, then thinned out or transplanted. It withstands considerable heat and drought. Annual sweet William is much the same as the familiar perennial sweet William except that it blooms, reaches maturity and dies within one season.

Feverfew is our heritage from our grandmother's garden. It is a low growing, many branched plant with each branch topped with a cluster of small, pure white, fully double flowers. They do their best in a sunny location. They are suitable for beds, borders or cut flowers. Cynoglossum bears lovely blue forget-me-not-like flowers and blooms continuously from June until September. It likes a dry, sunny location, and is rated as easy of culture and quick to flower.

Candytuft comes in several pastel colors. It is a small, low growing bushy plant which bears neat clusters of flowers in profusion during cooler weather. The blooming season is not as long as for some others. It blooms in early summer. Balsam is another old-time favorite. It is an attractive, waxy looking, tree-type plant, bearing masses of large, fluted pastel-colored flowers. It is easily grown from seed and when mature should reach a height of two feet. It comes with either single or double blossoms. After the plant reaches a height of 12 to 15 inches, the tip of the main stock should be nipped off so that it will branch out properly.

Gilia is a free-flowering plant growing 15 to 24 inches tall. It comes in blue and in white. Diascia is a dwarf plant, bearing spurred, rose-pink and rose-salmon flowers on spikes 12 to 18 inches in height.

Personally, the writer would not attempt a bed of mixed annuals without the thrifty growing, profusely flowering petunias as a massed effect throughout the center length of the bed. They begin flowering when the plants are quite small and continue to grow and bloom till after a hard frost.

The next height group includes blue lace flower, stocks, giant snapdragons, zinnias, salvia, calliopsis, scabiosa, shirley poppies, lavatera, clarkia, larkspur, and cornflowers. Many of these are familiar to our readers, so only the unusual ones will be discussed in detail. All range in height from two to three feet and could appropriately come in various clumps just back of the massed display of petunias.

Background Plants Listed

The very tall background border plants include cosmos, nicotiana, amaranthus, spiderplant, and centaurea imperialis (thistle-like cornflower). Castor bean plant may be included herewith, even though it is interesting only for its beautiful foliage.

Cosmos now come in many beautiful colors and in several types of flowers, notably the double crested and ray-flowering, in addition to the ordinary flower. Their height averages around six feet. Spider plant grows four to five feet tall if planted in a warm, sunny location. The colors are rose and white. Amaranthus is noted for its showy drooping foliage, and for its bright flower heads. Nicotiana is a tall, fragrant-flowered tobacco plant.

If you smoke for pleasure

—and that's what made this cigarette famous—join the happy company of smokers who are getting complete enjoyment from smoking

Camels

Today, as for many years, Camels lead by billions and they keep right on growing

© 1928, R. J. Reynolds Tobacco Company, Winston-Salem, N. C.

Interests and Activities

The Orchard Home

Observations and Comments

Topics and Problems Concerning the Home, Family and Neighborhood. The Social Side of Farm Life.

Conducted by Mary Lee Adams

One of Our Best Weeks

OUR LITTLE years have only 52 weeks, and at least five times 52 have been set aside by various interests for special observance. But when the President officially designated yet another week as American Forest Week, everyone with the good of the country at heart must have been pleased.

Some American forests are the most superb in the world. It is terrible to think what risks these priceless treasures run through ruthless cutting or through sheer carelessness with fire. The latter danger is the more sweeping. Unless the gospel of preserving our woodlands has been successfully preached in your community, you have already this spring seen with your own eyes much wanton destruction of budding loveliness.

The perfect growth of a single season is far from all that is lost. Once a stand of timber is destroyed, it takes long to restore it under most favorable circumstances. In the case of trees like our magnificent western redwoods, which have taken thousands of years to grow, no restoration is possible.

Back of all the saddening blight of beauty, there lies the utilitarian reason that land denuded of trees is exposed to loss of fertility and to devastating floods. "Every year an average of 80,000 fires scourge our woodlands, steadily undermining their vitality."

The terrible catastrophes of such deforested lands as China, and our own losses through fire and flood, seem to make little impression. At this season, literally millions of city people are planning motor tours and camping trips to the woods. The camper's fire is an ever-present menace.

Women's organizations could do much toward helping Uncle Sam to save the forests. All campers must be taught to be both afraid and ashamed to show the least negligence in regard to fire. Setting fire to the woods and burning-over land is a practice still prevalent. The whole countryside is often thus defaced. Persistent education, added to proper legislation, is the only remedy.

"PUT YOUR spoon in your right hand, Betty," said a patient mother for the hundredth time to her left-handed four-year-old daughter. Betty transferred her spoon with a sigh, "Mother, I don't see why Jesus didn't put my right hand on my left arm and then I wouldn't go wrong."

When Women Remain Womanly

THE ORCHARD WOMAN, as a rule, does more or less social work in her community but is seldom what is called "gainfully employed" outside of the home. She feels a sisterly interest, however, in that vast army of women who are earning in various industries their own living and often that of several others.

The phrase "gainfully employed" does not always work out so well as it sounds. The stress is on the employment rather than on the gain. Investigation shows that these women are frequently much underpaid.

Their position is, however, being constantly bettered, and abuses are being weeded out so that upon the whole, their outlook is brighter than it was when they first invaded the ranks of almost every industry.

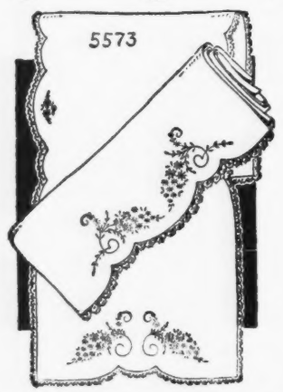
For a long time, working women were regarded as having no home responsibilities. A wage earner meant a man to most people. The women, they said, were merely seeking to increase their pin money, while husbands, fathers and brothers gave them substantial support. Today, the women too are known to be family wage earners.

The point of especial interest is that the unmarried woman wage earner is far more apt than the unmarried man to contribute her all to the family support. Fathers and mothers almost invariably contribute their entire earnings to the family, but three out of every five daughters in industry do the same, while only one out of every three sons fails to retain a portion of his earnings for his own use.

The girls, though earning lower wages, contribute practically the same amount of money as the boys. It is a satisfaction to find a definite fact that points to the persistent unselfishness and love of home and family on the part of women. It fortifies us against the criticism we sometimes hear that women have lost their lovelier qualities since they, perforce, entered the business world.

LITTLE MARY was eating lamb chops when she threw a chill over the festive board with the question, "Daddy, do you 'spose this little lamb cried when the butcher killed him?" Daddy, suppressing a shudder, replied, "No, darling, I hope not. Anyhow, it's all right if we use lamb for food." "But Daddy, I think we have plenty of carrots and cabbage without eating little lambs."

Pillow Cases, Scarf, Clothes Bag and Apron



PILLOW CASES AND SCARF NO. 5073.

Furnished in set only. Scarf 18 by 45 inches. Pillow cases 42 inches. Stamped and hemstitched on beautiful linen finish, seamless tubing of fine count with no filling. Scarf hemstitched on all four sides on Lynchburg, a good weighty fabric bleached a snowy white with a fine linen finish. Detailed working chart furnished with each piece. Price of the set of scarf and pillow cases, $1.50 postpaid.

CAM-FO-BAG.

The "Cam-fo-Bag" is for the protection of all winter clothing, blankets, furs, draperies and woolens from moths. Therefore, every woman who reads this page will want to have this wonderful new Cam-fo-Bag, which will keep the most enterprising moths away from blankets, draperies and woolens, as well as protect clothes and furs. Dust, dampness, and the fading that comes from too strong a summer sun are also kept away from the winter apparel by this dust, light, and moth-proof bag. For those who take to the highways in the touring season, it is very useful, as it can hang in the car and will protect one's visiting costumes from the dust or rain. Hangs on hook, or bar, or closet wall, and is sturdily made to last a lifetime. Has double flap fastener. The hooks and frame made of finest tempered steel. Weight of garments supported by frame. Index card in outside pocket provides for the listing of articles stored in bag. Price, postpaid to any address, $4.

MUSLIN APRON NO. 5402.

Stamped on finest quality unbleached muslin, light weight, closely woven, showing one of the latest designs. Full instructions for completing the embroidery designs are printed on the material furnished. Sent postpaid to any address for 45 cents.

Embroidery Department, American Fruit Grower Magazine,
7417 Luella Avenue, Chicago, Ill.

Do You Know This Lady?

IT WAS a keen observer who said, "Many people are willing to be martyrs if necessary, but few are willing that their martyrdom should go unknown." Many fine, good persons are not averse to advertising their good deeds. They act on the scriptural injunction not to hide their light under a bushel, but they forget not to let their right hand know what their left hand doeth.

A gentle-voiced, madonna-faced woman once came to our neighborhood and quickly enchanted us. She told us how, in a great sorrow, she had prayed for guidance, and her being in our midst was a direct answer to that prayer. The angels had led her hither.

But soon we found that our small efforts were poor in comparison to hers, and we somehow began to weary of well-doing. She was such an ardent dispenser of sweetness and light. She did any number of nice things, and naturally, the place being small, every one knew about them.

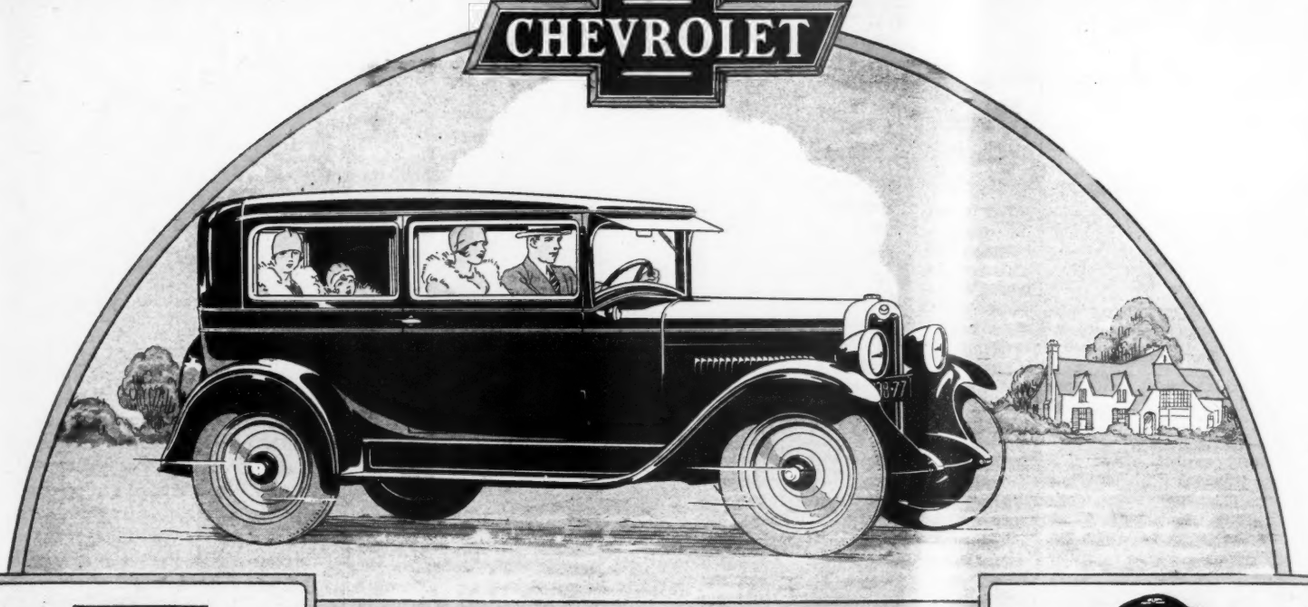
She gave the poor little Johnson girl a dress to go to school in. She sent the needy Smiths a load of coal. At the community picnic she let it be understood that she would be glad to pay for the dinner of anyone who couldn't very well afford it.

Being foolishly sensitive, none of us took advantage of this open offer. But was that her fault? She refused to take any credit for these lovely deeds because they were simply the answer to her daily prayer when she asked divine guidance to some good deed for the day.

One of the very nicest things she did was when she took little lame Johnny Jones, whose people had him on rough home-made crutches, and had him measured for a comfortable pair. She was so interested she just couldn't help confiding in a friend how rewarded she had been by seeing the glow of delight on Johnny's face. "But I count on you not to betray me should anyone happen to ask you where he got his new crutches."

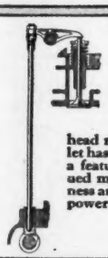
Well, no one had to tell because, as it turned out, everyone had heard. Little by little, in our unregenerate way, we grew almost impatient over these manifestations of Christian charity. Instead of running to meet her as formerly, there were people (among them, I regret to say, some whom she had favored) who would turn into another path when they saw her coming.

CHEVROLET



Fisher Bodies

Chevrolet is the lowest priced car in the world offering bodies by Fisher—famous the world over for style leadership, comfort, modern design and the safety of combined hardwood and steel construction.



Adjustable Valve Tappets

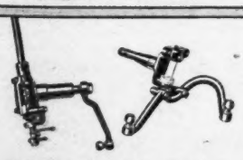
The improved valve-in-head motor of the new Chevrolet has adjustable valve tappets—a feature which assures continued motor efficiency and quietness and prevents gradual loss of power and acceleration as the car is used.

"Invar Strut" Pistons

Constant clearance alloy pistons, designed with two "invar struts" in each, make the Chevrolet motor smoother, snappier and more powerful. The costly "invar struts" minimize expansion and contraction permitting close fitting pistons to assure quietness and efficient operation.

Rugged One-Piece Rear Axle

A rear axle proved by millions of miles of use. The differential mechanism and side gears are securely mounted, while the housing is the one-piece type fitted with an inspection plate for convenient, inexpensive adjustment.



Ball Bearing Steering Gear

The new Chevrolet handles with marvelous ease and surety—for the worm and gear steering mechanism is fitted with ball bearings throughout, even at the front axle knuckles.

Embodying every modern feature of Advanced Automotive Design!

Rugged, powerful and dependable—the Bigger and Better Chevrolet is designed and built to deliver the strenuous, day-after-day service that a motor car must give when used on the farm.

Every unit of this remarkable car has been developed by engineers who are specialists—and has been proved by tens of thousands of miles of testing at the General Motors Proving Ground.

Visit the salesroom of your Chevrolet dealer and make your own inspection of this sensational car. Note the sturdiness of its construction throughout—definite assurance of years of dependable service. Drive it—and see how effortlessly it climbs the steepest hills—how easily it steers and rides over the roughest roads. Note how generously roomy it is—how smartly styled.

Then you'll realize that here are quality in design, quality in materials and quality in construction never before available at such amazing low prices.

CHEVROLET MOTOR COMPANY, DETROIT, MICHIGAN
Division of General Motors Corporation

The Touring or Roadster	$495	*The* 4-Door Sedan	$675	*The* Imperial Landau	$715
The Coach	$585	*The* Sport Cabriolet	$665	Utility Truck (*Chassis Only*)	$495
The Coupe	$595	All prices f. o. b. Flint, Michigan		Light Delivery (*Chassis Only*)	$375

Check Chevrolet Delivered Prices

They include the lowest handling and financing charges available

Bigger and Better

Non-Locking Four-Wheel Brakes *with separate Emergency Brake*

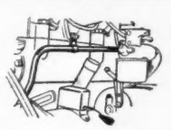
Chevrolet's four-wheel brakes were developed in cooperation with General Motors engineers. They are non-locking, have an area of 189 sq. in. and are separate from the emergency brake.

Gasoline Tank at Rear

All Chevrolet models have a safety gasoline tank at the rear and a vacuum fuel system which assures positive gasoline supply even on the steepest hills. The tank is protected by a heavy steel cross member and has a gasoline gauge.

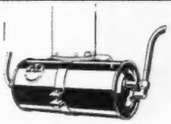
Genuine Duco Finishes

All Chevrolet models are finished in modish shades of genuine Duco—the original, modern motor car finish which does not check or crack and which keep its lustrous new car beauty indefinitely.



Crankcase Breathing System

A ventilating system which clears the crankcase of vapors prior to condensation, minimizes oil dilution, and adds materially to the long life of the motor.

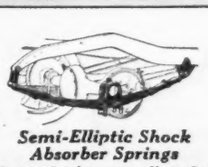


AC Oil Filter

The crankcase oil that is circulated by the self-priming pump is constantly forced through an AC oil filter which strains out dirt and foreign material, thereby increasing the life of all moving parts inside the motor.

AC Air Cleaner

An AC Air Cleaner is another motor safeguard which removes dust and grit from the air drawn into the carburetor—a modern feature which adds to car life and operating efficiency by reducing internal wear.



Semi-Elliptic Shock Absorber Springs

Comfort and safety over all roads is assured by Chevrolet's semi-elliptic shock absorber springs set parallel to the frame. These are 84% as long as the wheelbase and are made of fine chrome vanadium steel.

Pipe-smoking Doctor Claims Time Record for This Tobacco

Says he has smoked this brand for twenty-five years

Evidently we "started something" in publishing pipe-smoking records of old-time members of the Edgeworth Club.

Here is a doctor who writes in from Oregon to tell the world that he has smoked Edgeworth steadily and exclusively for a quarter century.

Any smoking tobacco that holds a man's affection that long must have some quality that commends it to others. Here's the letter in which Dr. Delepine claims the record:

St. Helens, Oregon
March 15, 1927

Larus & Bro. Co.,
Richmond, Va.

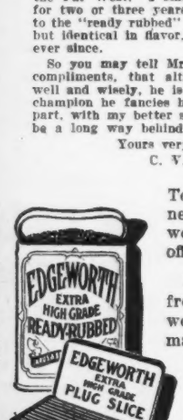
Gentlemen:

I notice with a good deal of amusement the challenge of Mr. J. J. Roberts of Columbia, S. D.

For my own part, I must confess to having smoked Edgeworth steadily for the last 25 years. I began before you had started putting up the "ready rubbed" kind, or at least before it was on sale in the Far West. I smoked your Plug Cut for two or three years. Then I switched to the "ready rubbed" as more convenient, but identical in flavor, and I have used it ever since.

So you may tell Mr. Roberts, with my compliments, that although he has done well and wisely, he is far from being the champion he fancies himself; and for my part, with my better showing, I expect to be a long way behind many others.

Yours very truly,
C. V. Delepine, M. D.



To those who have never tried Edgeworth, we make this offer:

Let us send you free samples of Edgeworth so that you may put it to the pipe test. If you like the samples, you'll like Edgeworth wherever and whenever you buy it, for it never changes in quality.

Write your name and address to Larus & Brother Company, 13 S. 21st Street, Richmond, Va.

We'll be grateful for the name and address of your tobacco dealer, too, if you care to add them.

Edgeworth is sold in various sizes to suit the needs and means of all purchasers. Both Edgeworth Plug Slice and Edgeworth Ready-Rubbed are packed in small, pocket-size packages, in handsome humidors holding a pound, and also in several handy in-between sizes.

To Retail Tobacco Merchants: If your jobber cannot supply you with Edgeworth, Larus & Brother Company will gladly send you prepaid by parcel post a one- or two-dozen carton of any size of Edgeworth Plug Slice or Edgeworth Ready-Rubbed for the same price you would pay the jobber.

[*On your radio—tune in on WRVA, Richmond, Va.—the Edgeworth station. Wave length 254.1 meters. Frequency 1180 kilocycles.*]

Fruit Farm Engineering

By E. W. LEHMANN

What Electricity Costs and What It Does for the Fruit Grower

ON THE Ruth-haven farm in Wisconsin it has been definitely proved that, at a moderate cost, electricity offers a most effective means for lightening work, according to Mrs. R. A. Runke. In their home, they have installed such equipment as a range for cooking, an ironer and flat iron, a water system, vacuum cleaner, and a combination electric and wood stove. Water for use in the barn is pumped by a motor; and the milking, separating, and washing of milk bottles are done by electrical power. The complete cost of the current and the upkeep required during the past year amounted to $156.53.

The cost to the average farmer who uses electricity for lighting, for small motor uses, pumping water and for power purposes but who does not use it for cooking, is much less than this. However, to be able to get the most from electricity, as many uses as possible should be developed. This is true whether a small unit electric plant is used or whether electricity is bought from a power line.

An electric motor as a substitute for "woman power" is recommended by Mrs. Runke as the best remedy for backaches among rural women. "As long as each Monday morning calls for a redoubling of effort, together with a draining of women's already over-taxed power, life on the farm will never be as successful as it should be," she said. "In the lightening of women's work, the first forces of resistance which must be overcome include such equipment as the barnyard pump and the antiquated wash board. These, together with an absence of the power washer and wringer and with no means of sewage disposal, are the cause of a tremendous amount of hard work on the farm."

On a total of 1787 farms in New York state on which R. F. Bucknam of the New York State College of Agriculture has records, the average number of outlets is 23 for the home, 12 for the tenant house, and about nine for the barn. Other uses have a total of 14 outlets.

In these farm homes, electric irons are the most popular; 1181 farms reported 1063 irons, 975 vacuum cleaners, and 775 washing machines. Toasters, battery chargers, curling irons, heaters, percolators and sewing machines rank in the order named. Other appliances mentioned less frequently are electric pads, stoves, grills, fans, waffle irons, hot plates, ranges, and refrigerators.

Electricity used to pump water was found in 389 houses, 244 barns, and 120 other buildings on these farms. Mr. Bucknam comments that "many farms have gravity water systems. Many others have not yet replaced small gasoline engines."

Use Small Motors

Of a total of 860 motors used on these 1181 farms, nearly 30 per cent were one-fourth horsepower, and by far the largest share were one horsepower or less. The most common use for motors is in milking machines. Other uses include general shop work, to run cream separators, churns, fruit graders, feed grinders, bottle washers, clippers, and 25 other specific uses which are mentioned rarely.

It has been estimated that the annual cost of sufficient electricity to light the home, pump the water, wash and iron the clothes, sweep the floors, grind the feed, milk the cows, separate the milk, operate a refrigerator and do most of the cooking is no more than the cost of keeping one horse. The total cost of owning and operating a small unit electric plant is somewhat less than the cost of keeping a horse; however, it would not supply sufficient power to do all of the things outlined above. The cost of having electricity on the farm would not be more than one-half as much as the cost of owning and operating the least expensive automobile.

When the cost of electricity on farms is considered in comparison with the cost of other things on the farm, it does not appear high, especially when a comparison is made of what it does for the farmer and his family.

Controlling Erosion in Orchards

SOIL EROSION is usually a serious problem where orchards are located on sloping land. The Mangum terrace is perhaps the most practical method of checking soil washing on slopes of from three to 15 per cent. The cultivation practiced in orcharding puts the soil in a condition that is ideal for washing. Forty tons of soil an acre each year may be lost on a slope not greater than four per cent. The amount would be greater on steeper slopes. To control soil erosion, it is necessary to control the surface run-off.

The percentage of surface run-off tends to increase when the organic matter and protective covering are removed from the soil. This means that erosion can be partially controlled by keeping the soil in good physical condition so that it will absorb as much water as possible. Contour cultivation and cover cropping also help in controlling erosion. However, in orchards on slopes that are not terraced, there is usually an increasing fight with gullies. Sheet erosion is really more serious than gullies.

When slopes are properly terraced, the surface run-off water is not permitted to gain sufficient velocity and collect in large enough amounts to carry soil particles as in the case where the water running from a slope gains in both velocity and quantity.

Orchards can be terraced after the trees have been planted. However, it is much easier to do this work before. Those considering setting out new orchards next fall on sloping land should seriously consider the possibilities of erosion losses, and where there is any possibility of washing, it would be well to consider terracing to prevent erosion. If you have a problem of erosion in your orchard, take the matter up with your county agent and get a demonstration.

Painting Farm Buildings

THE NEED of painting farm buildings is based largely on appearance rather than on the relation of

Protection from dangerous sprays

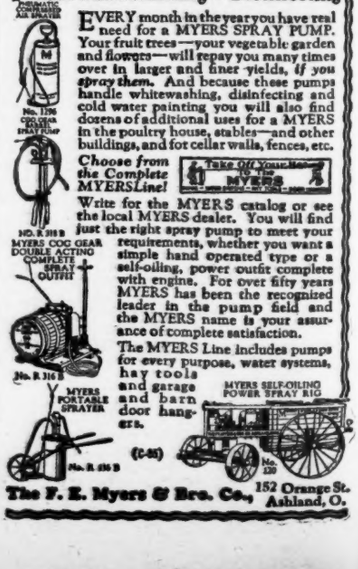
WHEN you work with fruit sprays, you can't help breathing in irritating and injurious chemicals unless you wear a mask.

Dr. Willson's Dust and Spray Mask gives protection to your lungs. Wear it also when you're treating seed or threshing. Play safe! Use it for all work with dust and poisons! Comfortable. Allows free breathing. Easy to adjust. Priced at $2.25. If your dealer can't supply you, write to us and we will send it C. O. D. Address Willson Goggles, Inc., 203 Washington Street, Reading, Pa., U. S. A.

DR. WILLSON'S DUST AND SPRAY MASK

KINKADE GARDEN TRACTOR
and Power Lawnmower
A Practical, Proven Power Cultivator for Gardeners, Suburbanites, Truckers, Florists, Nurserymen, Fruit Growers, Country Estates and Poultrymen.

Catalog Free
American Farm Machine Co.
1034 33rd Ave. S. E. MINNEAPOLIS, MINN


Outdoors and Indoors -you need a MYERS SPRAY PUMP
For Spraying~Whitewashing
~Cold Water Painting ~ Disinfecting
EVERY month in the year you have real need for a MYERS SPRAY PUMP. Your fruit trees—your vegetable garden and flowers—will repay you many times over in larger and finer yields, if you spray them. And because these pumps handle whitewashing, disinfecting and cold water painting you will also find dozens of additional uses for a MYERS in the poultry house, stables—and other buildings, and for cellar walls, fences, etc.
Choose from the Complete MYERS Line!
Take Off Your Hat to MYERS
Write for the MYERS catalog or see the local MYERS dealer. You will find just the right spray pump to meet your requirements, whether you want a simple hand operated type or a self-oiling, power outfit complete with engine. For over fifty years MYERS has been the recognized leader in the pump field and the MYERS name is your assurance of complete satisfaction.
The MYERS Line includes pumps for every purpose, water systems, hay tools and garage and barn door hangers.
MYERS COG GEAR DOUBLE ACTING COMPLETE SPRAY OUTFIT
MYERS PORTABLE SPRAYER
MYERS SELF-OILING POWER SPRAY RIG
The F. E. Myers & Bro. Co., 152 Orange St. Ashland, O.

paint to the life of the building. The life of any frame building is greatly lengthened by applying a coat of paint at the right time. The principal objection to the use of wood as a building material is the fact that it is a material which decays, due to the action of the weather. To delay painting is poor economy because if decay of the wood once gets a start, even though the wood is later covered with a coat of paint, the rotting often continues.

Either during the spring or early fall is a good time to paint. All surfaces to be painted should be clean and dry before the paint is applied. A good quality of paint is essential to secure the best results. If a ready-mixed paint is bought, it should be secured from a reliable company. Many people buy materials and mix their own paint. When this is done, extreme care should be practiced to have the materials thoroughly mixed. Because of the fact that labor is a big item of cost in painting a group of buildings, only the best of materials should be used.

During recent years the spray painting machine, which is used to a large extent in the industries, has been used extensively in painting farm buildings. An experienced operator with a spray painting machine can cover from four to six times as much surface as a painter with a brush. This greatly reduces the cost of applying the paint. There are other advantages in using a spray painting machine, in that cracks and places that are difficult to reach with a brush can be painted satisfactorily with a spray painting machine. Where a group of farmers purchase such a machine, its overhead cost against each job is greatly reduced.

Cost of Tile Drainage

FEW FARMERS who have wet spots in their fields that need drainage realize that the cost of doing without drainage is usually more than the cost if drainage is installed. In other words, the old saying, "You pay for drainage whether you have it or not," is true when a farmer has a wet spot on the farm. The actual cost of tile draining a field will vary from $25 to $50 an acre, depending largely on the spacing of the tile.

In considering whether a wet piece of land should be drained or not, the first thought should be with reference to the amount of additional return that can be expected by having the entire field well drained. This return would be twofold: first, in increased production; and second, in increased efficiency and economy of handling the work in the field.

As to the actual cost of doing a job of tile drainage, this depends on local conditions. Where the labor is done by hired help on the farm the cost can often be reduced. Proper spacing of tile and proper depth are essential to successful drainage. To put the tile farther apart or to have them too near the surface as a matter of economy is poor practice. Except in soils that are underlaid with a tight subsoil, the laterals should be placed about three and one-half feet deep and from 100 to 150 feet apart, depending on local needs. While it is cheaper to use four-inch tile, the saving is hardly justified over what it would cost to use five-inch tile. Extreme care should be observed to see that the main tile and the sub-mains are of adequate size. To economize in this direction is also poor practice. In other words, the matter of effective results should be kept in mind, as well as the matter of economy.

Saving Time with Machinery

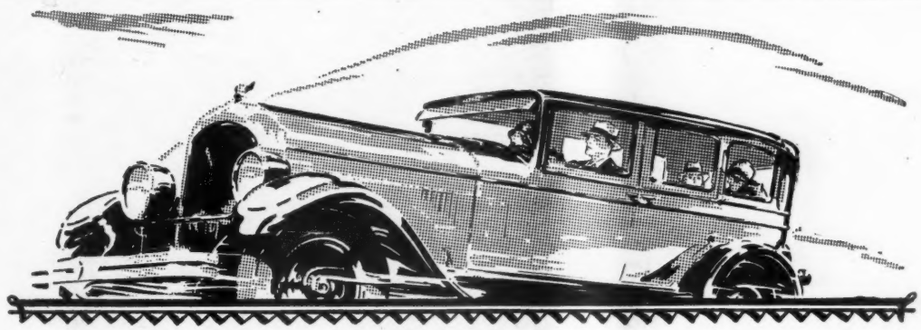
EVERY TIME I visit a manufacturing plant, I marvel at the developments in machinery used to relieve human effort. Labor is the big item of expense in manufacturing production, just as it is the big item of expense in agricultural production. In farm production, in most cases it is the biggest item of expense. Last week I visited a large plow factory and process after process was pointed out as being completed with less labor than formerly by means of machinery. For example, a plow share, composed of at least four parts, was heated, assembled and welded with only one heat, when formerly it required five heats to complete the operation. A dozen or more holes are drilled in a heavy plow frame at one time with a machine that drills every set of holes so that every frame can be interchanged and fitted perfectly. This operation is completed by one man in less time than it takes to tell about it.

Such machines multiply the efforts of the industrial worker. This saving in time to complete an operation is reflected into the price of the machine and into the wage of the worker. There is no question but that mass production in the industry is making it possible to produce things more cheaply. Automobiles are considerably cheaper now than formerly because of this; the same is true of a lot of other things that we have.

When we depend entirely on the skill of the worker, using minor equipment common to the trade, we find the cost is high. A good example of this is the work done by men in the building trades. This is true of the brick mason, the plasterer, and the carpenter. If brick could be laid by machinery at a rate of four to 10 times as fast as at present, and plaster could be applied at the same rate, the need of men for this type of work would be less, their incomes would be greater, and our houses would cost less.

As farmers, we should think of machines in relation to our business, as the manufacturer thinks of a machine in relation to his business. We should not think of a machine as a tradesman thinks of it. The ordinary painter does not think kindly of the painting machine, which would increase his capacity four to sixfold, and yet the manufacturer uses such a machine because it greatly reduces the cost of doing the job and makes for greater production.

On some farms there are one-row plows where two-row plows could be used to good advantage. On other farms, there are sulkies where gangs could be used and would multiply the efforts of the worker by two. No doubt there are fruit growers who have hand barrel sprayers when their operations would justify the use of a power machine.



Why pay $1000 more...when

CHRYSLER "72"

at $1545

gives you *greater* performance

Illustrious New Chrysler "72" performance out-Chryslers even Chrysler. It has jolted the public's preconceived notions of what its money should be able to buy.

Here is a truly marvelous car, in body styles priced from $1545 to $1795, which gives in performance *all and more than you have been led to expect from cars costing $1000 more.*

Here is a Chrysler triumph that overshadows the foremost accomplishments of the industry.

72 miles and more per hour. 75 brake horsepower. Acceleration that leaves every other car behind. Vibrationless smoothness that only a Chrysler counterweighted 7-bearing crankshaft can give.

Experience for yourself the thrill of this brilliant performance. Chrysler enthusiasm invariably follows the realization that even $1000 more than "72" prices does not get you as much in performance, in quality, in style, in value.

Illustrious New "72" Prices —Two-passenger Coupe (with rumble seat), $1545; Royal Sedan, $1595; Sport Roadster (with rumble seat), $1595; Four-passenger Coupe, $1595; Town Sedan, $1695; Convertible Coupe (with rumble seat,) $1745; Crown Sedan, $1795. *All prices f. o. b. Detroit, subject to current Federal excise tax. Chrysler dealers are in position to extend the convenience of time payments.*

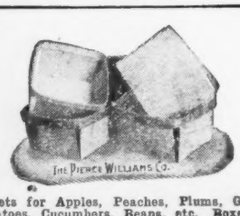
New Chrysler "Red-Head" Engine —*designed to take full advantage of high-compression gas, giving 12% greater torque with greater speed, power, hill-climbing ability; standard equipment on all body models of the 112 h. p. Imperial "80," also standard on the roadsters, and available at slight extra cost for other body types, of the "62" and "72."*

Doing chores—late and early

IF I HAD chores to do after dark and before sun-up, you can bet your bottom dollar I'd have a good flashlight to light my way about. I'd use it in and around the barns—you wouldn't catch me risking a fire. I'd take it with me every time I left the house—it saves many a bad fall or a cracked shin.

And I'd keep it in fine fettle with the very best of batteries—Eveready Batteries—just as dependable and long-lasting as the Eveready Columbia Hot Shot I use on my engine and the Eveready "B" Batteries on my radio.

An Eveready Flashlight is the lantern the modern farmer uses. Get the flashlight habit!



Baskets for Apples, Peaches, Plums, Grapes, Tomatoes, Cucumbers, Beans, etc. Boxes and Crates for Berries, Cucumbers, Celery, Cauliflower and vegetables of all kinds.

PLANT BOXES

Catalog mailed on request

The Pierce-Williams Co. South Haven, Mich. Jonesboro, Ark.

STANDARD GARDEN TRACTORS

Plows Seeds Cultivates Mows Hay and Lawns

A Powerful Tractor for Small Farms Gardeners, Florists, Nurseries, Fruit Growers and Poultrymen.

DOES 4 MEN'S WORK

Walking & Riding Equipment

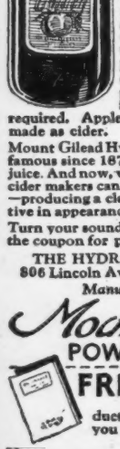
Free Catalog Does Belt Work

STANDARD ENGINE COMPANY

3281 Como Ave. Minneapolis, Minn.

Eastern Branch 146 Cedar St., New York

....market your apple crop *this way*



Be Independent of the Commission Man

SOLVE the question of unmarketable undergrade apples once and for all. Grade your fruit as closely as you please—to secure the top-notch prices. Then turn your undergrades into highly profitable *fruit products*. Farm-made apple butter, jelly and fresh cider will draw a profitable trade right to your door.

Mount Gilead equipment makes undergrade apples yield a better profit than fancy fruit. No large investment and no special skill required. Apple butter and jelly are as easily made as cider.

Mount Gilead Hydraulic Cider Presses have been famous since 1877. They get every last drop of juice. And now, with the new Mount Gilead Filter, cider makers can filter fresh cider without heating—producing a clear sparkling beverage as attractive in appearance as it is in flavor.

Turn your sound undergrades into money. Send the coupon for prices and catalog.

THE HYDRAULIC PRESS MFG. CO.
806 Lincoln Avenue, Mount Gilead, Ohio

Manufacturers of the NEW

Mount Gilead POWER SPRAYERS

FREE! To bonafide orchardists we offer a FREE subscription to Orchard Products News. Check the coupon if you want it.

Name.....

Address.....

...Fresh Juice Filters ....Hydraulic Cider Presses

...Orchard Prod. News ....Apple Butter, etc. equip.

Power Sprayers for Orchards..... Crop.....

Fruit Farm Poultry

By RALSTON R. HANNAS

Rearing the Young Stock

THE HARDEST time in the raising of chicks is in the early weeks of brooding. When the chicks get to be about six or eight weeks old they are about ready to do without heat. The exact age at which heat may be removed from the chicks will depend upon the time at which the chicks were hatched, the season and the local climatic conditions. In some sections chicks can be removed from heat earlier than in others.

When chicks are from six to eight weeks old, as a rule, the heat can be gradually cut down. As the weather improves and the chicks grow, the stove can finally be allowed to go out. After it has been allowed to go out, the hover should be kept in place for a few days so the chicks can go under it if they feel chilly. For a few nights it may be necessary to start the stove and keep it going all night, though not with such force as was usual up to this time.

For a while it may be necessary to keep the hover down just at night only, with the fire out. By this time it should be possible to let the chicks go without any heat at all, though it is advisable to have the stove ready in case there should be a particularly cold night, as is likely to occur at this time of the year. If desired, the young stock may be removed to a growing range where there is plenty of green food and where they can have a good place to run and range.

The feed during this period should consist of regular sized grain cracked—not the fine cracked feeds. Feed the grain scratch ration twice daily, morning and night, and keep the regular growing mash before them all the time. The same mash that was used during the brooding period can be used at this time. There are plenty of good commercial mashes on the market made by reliable feed concerns. Any of these can be used to good advantage.

It is important to see to it that the mash hoppers are not allowed to become empty, for this is the growing period, when the stock must eat lots of feed to expand the digestive organs and help develop a mature pullet having a digestive system capable of handling a large amount of feed—it is such pullets that make the best layers. The water pans are also important, for about half the bird's body is water. Good pullets—or cockerels—cannot be grown without water. The water pans, therefore, must not be permitted to become dry.

Shade in some form must be supplied. Natural shade is the best kind. Trees, bushes, shrubbery, crops such as corn, are all highly desirable. But if there does not happen to be this natural shade, artificial shade must be provided. This can be done by having sheds or shelters to protect the birds from the heat of the summer sun. Sun is most desirable, but it can be too strong to be of value. The birds will not stay out in it if they can get out of it. We do not like to stay in the broiling sun, and we should not expect the chicks to do so either.

If there is no natural green growth that the youngsters can eat, it must be supplied either by growing something especially for the chicks on a part of the range, or by cutting green food from some other field and carrying it to them.

Growing chickens should not be turned out to roost in the trees and to care for themselves. A shelter of some sort should be provided for them. It is not necessary to have a real tight house such as is used for the layers in the winter, but something that will protect them from showers and winds, and at the same time allow of a good circulation of air for the hot summer nights, should be provided. A house with wire sides is used by many growers to good advantage. Have roosts in these houses that are about three feet off the floor, so the birds can be off the floor and have some protection from pests that prey on them.

May in the Laying Flock

AS A GENERAL thing, May is the month when the layers make their greatest production. This does not mean that they can be neglected because they lay eggs and that they can be allowed to shift for themselves.

We have been saying right along that it is necessary to keep up the body weight, and we have suggested that a wet mash be given the birds each day throughout the winter to help them maintain their condition. Laying eggs is a drain on the systems of the layers and it is now getting along toward the end of the season. So it is important that the body weight be watched. A wet mash can well be fed now, but it is a good plan to make it more moist than during the winter. Moisten it with milk. This will help to maintain their appetites and will result in a greater mash consumption.

Green food is also important now. It has a beneficial effect on the bowels, and where it is the endeavor to maintain a good consumption, it is equally necessary to feed plenty of greens to help keep the bowels open and the birds, therefore, in good condition.

Lice and Mites

ONE THING that helps to pull down the vitality of layers at this season is the presence of such external parasites as lice and mites. Lice will live right on the birds and will give them scarcely any peace, while mites stay on the perches, dropping boards, nests and in cracks and crevices during the day but come out of their hiding places at night and get on the birds. They then suck their blood and drain the birds' systems in that way. Both kinds of pests should be gotten rid of at once.

Now is a very favorable time to treat the birds to rid them of these pests. Dust them with some good lice powder, making sure that the powder gets into the feathers. Sodium fluoride, a drug that can be obtained at any drug store, is a mighty good powder to use if it is not desired to use a commercial preparation. A pinch of this material around the vent, on the back, under each wing, between each leg and the body, on the head, on the throat, on each wing and on each thigh will practically rid the bird completely of body lice. To make this work effective, all birds in each pen should be treated on the same day, so there will be no chance

A Welcome Treat

OFF in the country. Appetites keen. And then the picnic lunch. What can be more delicious than tasty sandwiches made with Beech-Nut Peanut Butter! Pack the boxes full for your next outing. Beech-Nut Peanut Butter is as nourishing as it is good. And so digestible.

Beech-Nut Peanut Butter

THE PEERLESS DUST GUN

is a winner—watch it dust!

Bugs Can't Park Here

When you want a dust gun that will produce results and give satisfaction get a Peerless. It will dust bushes and medium size trees, also underneath the leaves on low plants. Just the gun for fruit growers.

A REAL GUN THAT GIVES REAL SERVICE

Write for descriptive circular, and tell us where you saw this adv.

PEERLESS DUST GUN CO.
1600 E. 24th St. Cleveland, O.

10 DAYS TRIAL!

The SHAW Du-All Tractor

Try it at our risk! Write for Liberal Trial Offer and Low Direct-from-Factory Price. The SHAW does every farm and garden power job in less time, with less labor. Fine for truck gardens, estates, etc. Runs belt machinery. Walking or riding types, single or twin engines. 2 speeds forward; can be equipped with reverse. Gauge wheel regulates depth of cultivating. Patented tool control. Free Book tells how power farming saves you money—no obligation—postcard brings it.

THE SHAW MFG. CO.
1405 Front St.
Galesburg, Kan.

BASKETS We manufacture 14-16 qt. Peach Baskets and 4 wood Hoop Bushel Hampers.
H. R. LINDABURY & SONS, - - Burlington, N. J.

It pays big dividends to SPRAY!

Don't let insects destroy your garden or fruit, when for only a few cents you can spray and kill them.

No matter what crop is infested, "Black Leaf 40" is the old reliable spray for Aphis, Thrips, Leaf Hopper and similar insects.

KILLS BY CONTACT and FUMES

"Black Leaf 40" kills these pests on your trees, shrubs, flowers, vines and vegetables not only by direct contact (hitting) but in extra measure, by the nicotine fumes. This "extra measure" of protection you cannot obtain from the non-volatile insecticides. Ask your dealer and County Agent or write for particulars.

Tobacco By-Products & Chemical Corp. Incorporated
Louisville, Ky.

F1

"Black Leaf 40"
40% Nicotine

of the treated birds being reinfested by those that have not been treated. Dipping may also be done, using a pound of the sodium fluoride in a tub of water to the hundred birds.

For mites, spraying is the general procedure. Spray the dropping boards, roosts and nests thoroughly with a strong solution of a good commercial disinfectant. It will pay to watch both lice and mites during the summer—the mites especially—giving another good spraying in about six weeks.

National Egg Week

THIS is the second year that the National Poultry Council, representing the various groups of the poultry industry, have established a National Egg Week for the purpose of informing consumers, primarily, of the value of the egg as a food. Poultry producers, themselves, can very well learn much that they do not know about the value of eggs as a food. May 1 to 7 is the week set aside as National Egg Week.

"Eggs for vitamines" is the slogan that will be used to bring this product forcefully before the consuming public. The fact that eggs contain necessary health-giving vitamines, are high in proteins, fats and minerals, and are economical, make them a mighty important article of food. City people are not the only ones who do not fully understand all the good qualities of eggs; there are many farm families as well that do not fully appreciate them. There are many different ways in which eggs can be prepared to make them into tasty and beneficial dishes.

Stolen Nests

STOLEN NESTS can largely be avoided by having comfortable, darkened nests, and plenty of them, in the laying house—at least one nest for every five birds. Better yet, yard the layers, giving them a large enough run so that a sod may be maintained in the yard—100 birds to the acre will permit of maintaining a sod in a chicken yard. A practice that is followed on some commercial poultry farms is to keep the birds shut in all day until about four or five o'clock, when the birds are let out and allowed to go where they will. They have laid by this time, generally, and this matter of stolen nests is thereby done away with.

The best plan is to yard them, giving them plenty of nests in the house. Hens that steal their nests often try to set, and the eggs that are in the nest are therefore spoiled for consumption. This reacts on the price that is paid for them by the buyer. Use every means, then, to break up these stolen nests.

Keep Old and Young Birds Separate

IT DOES NOT pay to allow the hens and the growing stock to run together or to even allow the growing stock to run on ground that the hens have had access to. If old and young birds run together, there is the possibility that the youngsters will not get their share of feed and will be crowded about.

There is also the possibility, which is far more important, that the old birds will act as carriers of a disease known as coccidiosis. This disease does not affect old birds, but these birds frequently spread the germs through their droppings and in this way infect the young birds. With the young ones, this is a serious disease which causes heavy losses. Keep them separated.

Egg Eating in the Flock

A DISAGREEABLE habit that sometimes breaks out in poultry flocks is the habit of egg eating. This is generally confined to a few hens, but will rapidly spread unless checked in the ringleaders. If the ringleaders can be caught, it is a good plan to pare down their beaks slightly so it is difficult for them to pick and eat the eggs.

Where this habit is quite general throughout the flock, it is possible that the shells of the eggs are weak and easily broken. Provide crushed oyster shell in small hoppers so the hens can have access to it at all times. It is also possible that any of the good commercial mineral mixtures can be mixed with the regular laying mash at the rate of five to eight per cent of the amount of the mash fed. This should help to strengthen the shells. In the winter time, cod liver oil may be given, but it is not needed during the summer as the hens are running outdoors and can take advantage of the ultra-violet rays of the sun.

What will also help to prevent the habit from starting is to provide plenty of nesting material in the nests so the eggs will not be broken when they are laid. One way in which the habit starts is by the eggs being broken in the nests and the hens picking at them from curiosity. Once the taste is acquired, it is hard to break it; they will go out of their way to break eggs after that.

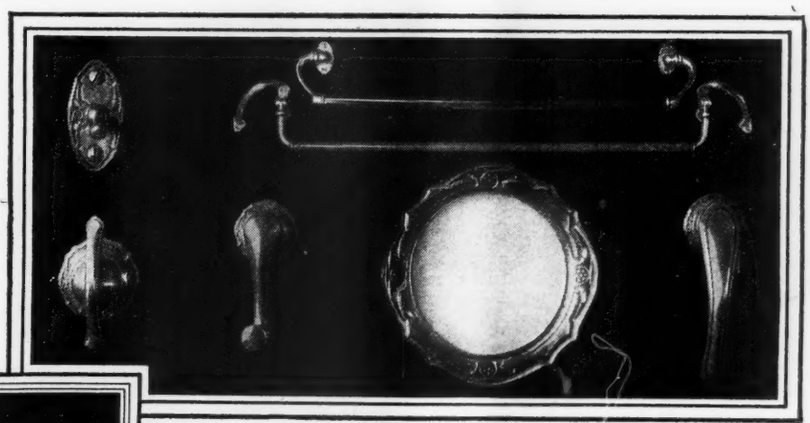
One simple remedy that has been used on the farm is to put vinegar in the drinking water at the rate of one-half cup to each gallon of water. Leaving this before the birds for from three to five days is claimed by many to break up the habit.

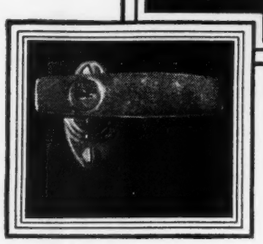
Break Up the Broodies

MUCH TIME is lost by some birds through broodiness. The quicker they are broken of broodiness, the quicker they will start laying again. Therefore, as soon as a broody hen is noticed, she should be removed from the pen.

One of the best ways of breaking up broodiness is to place the broodies in a coop by themselves. For this purpose, a coop is used that is slatted on all sides and the bottom—the slatted bottom is the important part. Slats two inches wide and two inches apart are used. This coop should not sit on the ground, but on the perches in the house or on legs outside, so the air can circulate underneath it. Hens confined to a coop of this kind are fed and watered regularly and are treated humanely in every way. The slats make an uncomfortable place to sit, however, and broodiness is soon broken up.

Fisher hardware *by* Artist Craftsmen





Door locks are another example of Fisher leadership and quality. Fisher door locks are built of the finest material obtainable and have attained that state of perfection where trouble with a lock has become almost unheard of. The safety lock used is a Fisher development which works on the same principle as the door lock of a house; in other words, tripping of the inside lever on the door securely locks the car so that it cannot be entered in any way without the use of a key.

Fisher initiated period hardware for use in motor car bodies. It went farther than that, and gathered into one organization a complete staff of engineers, designers, artists and modelers, prepared to carry out in every detail the modern demand for artistic harmony of design in all body hardware, internal fittings and similar appointments. This great organization of artist craftsmen is known as the Ternstedt Manufacturing Company, a unit of Fisher and the largest manufacturer of body hardware in the world. In this great hardware plant, Fisher obtains individualized fittings and appointments, radiator ornaments, door handles, trim hardware, robe rails, foot rests—all synchronized with the design *motif* of each individual car creation.

Body by FISHER

HERE's the Lead that Puts Certainty into Your Calyx Spray

OF all the pests you battle with, Old Man Codling Moth is the worst trouble maker. He seems to have the nine lives of a cat.

But he has yet to come out winner in a battle with a spray rig whose tank is loaded with GRASSELLI Arsenate of Lead. When he gets that mix in his tummy, he'll never eat another lunch off your orchard. He is *through*—and knows it.

As you stir up your calyx spray this year, add another ingredient to the "mix", CERTAINTY, by using only Grasselli Lead. And that additional ingredient costs you nothing.

Also in 1 lb Cans for Shrubs and Gardens

There's a Grasselli dealer near you.

THE GRASSELLI CHEMICAL COMPANY
Established 1839 *Cleveland, Ohio*

Grasselli SPRAY PRODUCTS

GRASSELLI GRADE
A Standard Held High for 89 Years

Excess Lime in Sprays and Dusts

(*Continued on Page 8*)

after bloom; (8) 12 weeks after bloom.

The test orchards at Dale View Farm, consisting of eight acres of apple trees ranging from 25 to 30 years old, and 12 acres of trees 15 years old, produced a moderate crop of 3200 bushels—almost exactly the same production obtained in the preceding season of 1926. In this dusting and spraying project, while there were more than 25 varieties under observation with strict accounting of results obtained from use of the various dust formulas on each, three standard varieties predominated in our plots treated with what I properly may term our standard spray and dust formulas. The three varieties likewise predominated in our only safely isolated check or untreated block of trees which was located on a farm immediately adjoining, and belonging to a neighbor who neither sprayed or dusted his orchard in 1927, but who had grown a nice crop of apples on the same trees, by spraying, in 1926. These three standard varieties were Jonathan, Rome and Stayman.

Dusting Experiments Conducted

Our previously determined plans for the season of 1927 provided for six dustings with home or hopper-mixed dusts, as follows: (1) in the pink of the fruit buds; (2) in the open calyx immediately following petal-fall; (3) one week after bloom; (4) two weeks after bloom; (5) three weeks after bloom; (6) in July, 10 or 12 weeks after bloom.

In the pink stage of the blossom buds, the entire series of plots, excepting two which were to be treated exclusively with copper-lime dusts, and the one small plot (about one-half acre in extent) to be sprayed throughout the season with a standard spray formula, were to be given a thorough, uniform dusting with an 80-20 formula of superfine sulphur and high grade hydrated lime. This "blanket application" of dust rich in sulphur, evenly coating the branches, twigs, fruit buds and newly-unfolding foliage at a very critical period so far as danger from primary infection by apple scab is concerned, appealed to us as the best possible safeguard against disease.

Strength of Materials Used

We planned to continue throughout the entire season of dusting, on one of the larger plots, the use of a dust formula providing for 80 parts of sulphur and 20 parts of lime, or 80 parts of sulphur, 10 parts of lime and 10 parts of lead arsenate, according to requirements of the different periods at which the dusts should be applied. This was to be the highest percentage of sulphur to be used on any of the plots in the Dale View Farm project.

Several modifications of the sulphur-dust treatment were decided upon, to follow the standard "blanket application" of an 80 per cent sulphur dust in the pink of the fruit buds. These modifications or reductions of the sulphur content of the dusts were to begin with the petal-fall or open calyx application. They were to include use of 50 per cent, 25 per cent and 10 per cent of superfine sulphur, with the addition of high grade hydrated lime to make up the required bulks, and

(*Continued on Next Page*)

Spraying and Dusting Tables

(Accompanying article by F. H. Ballou and I. P. Lewis on "Excess Lime in Sprays and Dusts")

Results of Use of Sulphur Dust of Standard Strength in 1927

Plots in our Dale View project, embracing nine varieties of apples, were dusted throughout the season of 1927 as follows:

(1) 80-20 sulphur-lime dust in the pink of the fruit buds;
(2) 80-10-10 sulphur-lime-lead dust immediately after petal-fall;
(3) 80-10-10 sulphur-lime-lead dust 2 weeks after bloom;
(4) 80-20 sulphur-lime dust 3 weeks after bloom;
(5) 90-10 lime-lead dust 5 weeks after bloom;
(6) 80-10-10 sulphur-lime-lead dust on July 26th.

Note.—Because of almost continuous rain and ceaseless wind our proposed application of dust one week after bloom of necessity had to be omitted. At this particular period the weather was, indeed, so extremely unpropitious that, in spite of the fact that we had everything in readiness for operation on short notice, we simply could not get even a few hours that were at all suitable for dusting or spraying.

Dusted with home-mixed dust. (Power duster used except where otherwise noted.)	First grade. Pct.	Second grade. Pct.	Third grade. Pct.	Fourth grade. Pct.
Ben Davis	95.8	1.9	1.9	0.2
Delicious (Golden)	92.7	2.7	3.2	1.3
Delicious (Golden), dusted by hand	97.7	0.8	1.3	0.6
Delicious (Red)	84.9	8.0	5.9	1.0
Ensee	85.7	8.1	5.5	0.6
Gallia Beauty	72.6	15.7	9.0	2.5
Jonathan	99.6	0.4	0.0	0.0
Rome Beauty	90.8	5.2	2.9	0.9
Stayman	90.0	4.6	4.5	0.7
Wealthy (dusted by hand)	95.5	3.9	0.5	0.0

Results of Spraying with a Standard Formula in 1927

(At Dale View Farm.)

Note.—Only one small plot of about one-half acre in extent, out of the 20 acres of orchard at Dale View Farm, was sprayed in the season of 1927. This was done merely for the purpose of affording a comparison of one of our most dependable spray formulas with dusts of different strengths. The spray program was as follows:

(1) 3-5-50 dry lime-sulphur, hydrated lime solution in the pink of fruit buds;
(2) 1¼-5-50 proportions of above named materials plus 1¼ lbs. arsenate of lead, in the open calyx, immediately after bloom;
(3) Same as in (2) 2 weeks after bloom;
(4) Same as in (2) and (3) on July 26th.

Jonathan	99.5	0.5	0.0	0.0
Moyer	97.0	0.3	0.9	1.6
Rome	86.9	4.7	4.0	4.2
Stayman	93.0	4.0	2.9	0.0
Check Plot—No Spraying or Dusting				
Jonathan	5.4	23.7	53.3	17.5
Paradise	8.2	43.2	43.6	4.8
Rome Beauty	0.0	0.5	56.5	42.9
Stayman	3.8	29.1	51.0	15.9

Results of Use of Sulphur Dusts of Modified Strengths in 1927

(At Dale View Farm.)

Dusted with 80-20 and 50-50 home-mixed sulphur-lime dust

80-20 sulphur-lime dust in the pink of the fruit buds;
45-45-10 sulphur-lime-lead dust immediately after petal-fall;
45-45-10 sulphur-lime-lead dust 2 weeks after bloom;
50-50 sulphur-lime dust 3 weeks after bloom;
90-10 lime-lead dust 5 weeks after bloom;
45-45-10 sulphur-lime-lead dust on July 26th.

Baldwin	97.3	1.9	0.6	0.0
Banana	82.5	9.0	5.9	2.4
Ben Davis	89.3	5.1	4.3	1.1
Benoni	86.5	11.0	1.7	0.6
Ensee (thinned)	79.8	9.6	9.1	1.5
Ensee (unthinned)	66.2	18.0	13.3	2.2
Grimes (densely-branched trees)	78.6	16.1	4.2	0.9
Grimes (well-pruned, open trees)	93.3	2.6	3.2	0.7
Jonathan	99.3	0.3	0.3	0.0
Lady	80.5	11.0	8.2	0.2
Linville	87.7	4.6	7.1	0.5
Ontario	96.5	2.3	1.1	0.0
Paradise Sweet	99.1	0.9	0.0	0.0
Rambo	57.3	19.7	20.4	2.4
Richard's Graft	97.1	1.8	0.9	0.0
Rome (in shade of woods)	59.1	23.4	12.5	4.8
Stayman	93.4	4.4	1.8	0.2
Sutton (old tree)	95.5	2.0	2.0	0.2
Sutton (young tree)	90.3	5.0	4.2	0.2
York Imperial	95.0	3.4	1.2	0.2

Dusted with 80-20 and 25-75 home-mixed sulphur-lime dust

80-20 sulphur-lime in the pink of fruit buds;
25-65-10 sulphur-lime-lead dust in open calyx;
25-65-10 sulphur-lime-lead 2 weeks after bloom;
25-75 sulphur-lime 3 weeks after bloom;
25-65-10 sulphur-lime-lead 5 weeks after bloom;
25-65-10 sulphur-lime-lead on July 26th.

Delicious (red)	70.0	16.1	12.5	1.4
Ensee	73.7	8.0	15.1	3.2
Grimes (No. 1 lot, including primary and secondary scab)	80.1	16.2	2.5	0.8
Grimes (No. 2 lot, excluding secondary scab)	95.6	1.1	2.3	0.8
Grimes (No. 1 lot, including primary and secondary scab)	76.0	18.3	4.2	1.5
Grimes (No. 2 lot, excluding secondary scab)	89.7	4.7	4.2	1.3
Rome	61.5	18.7	12.3	7.4
Stayman (near woods)	68.6	20.8	9.5	0.9
Sutton	84.5	8.0	6.3	1.1

Dusted with 80-20 and 10-90 home-mixed sulphur-lime dust

80-20 sulphur-lime in pink of fruit buds;
10-80-10 sulphur-lime-lead in open calyx;
10-80-10 sulphur-lime-lead 2 weeks after bloom;
10-90 sulphur-lime 3 weeks after bloom;
10-80-10 sulphur-lime-lead 5 weeks after bloom;
10-80-10 sulphur-lime-lead on July 26th.

Jonathan (lot No. 1)	91.5	4.6	3.3	0.6
Jonathan (lot No. 2)	91.6	6.5	1.5	0.3
Jonathan (lot No. 3)	94.0	5.5	0.5	0.0
Stayman	92.1	4.2	2.2	1.1
Grimes (thinned)	86.3	10.8	2.6	0.2
Grimes (unthinned)	62.4	30.4	5.1	1.9
York Imperial	94.1	3.5	2.2	0.0

Results from Dusting Trees from One Direction Only, in 1927

(At Dale View Farm.)

In this comparison, which really caused us quite a lot of fruit that otherwise undoubtedly would have been nearly all sound and marketable, several of our larger trees of Rome and Grimes were dusted from one side of the row only, during the entire dusting season. The dust was blown from the same direction at each successive application.

	Per cent wholly free from scab.
Rome Beauty	
Apples produced on the sides of the trees to which, each time, the dust was directly applied	87.9
Apples produced on the sides of the trees opposite to and farthest from the sides to which the dust was directly applied	11.4
Grimes Golden	
Apples produced on the sides of the trees to which, each time, the dust was directly applied	78.6
Apples produced on the sides of the trees opposite to and farthest from the sides to which the dust was directly appled	12.9

inclusion, as a matter of course, of lead arsenate in the proportion of 10 per cent, at periods corresponding to those in which arsenicals are commonly used in spraying.

Our first application of dust, in the pink of the fruit buds, like all others throughout the season, was to be made from both sides of the tree rows. We had faithfully observed this rule of our own making, regardless of advice or suggestions from various sources, from the very outset of our use of a power dusting machine in the season of 1926, and regard it as at least one of the good reasons why results of our first dusting experiments proved to be so uniformly satisfactory and encouraging.

For "spot dusting" in orchard work and for small orchard operations this popular hand duster gives general satisfaction.

Furthermore, in order to determine, if possible, the relative efficiency of dust thoroughly applied to large trees from only one side and the same direction throughout the dusting season, in comparison with equally thorough dusting from opposite sides of similar trees at each successive dusting period, we dusted several of the older and larger trees from one and the same direction at each of the six applications. The results of this test, as well as those of the projects heretofore mentioned, and to be mentioned herewith, are to be found in the tabular records on page 22.

In addition, we determined, by careful thinning of fruit from a number of representative, heavily laden Grimes Golden apple trees, to find what the effect on secondary scab development would be if we removed, very early in the season, as nearly all of the apples showing primary infection of scab as it would be possible to see in the ordinary course of thinning operations. For, while the fruit of Grimes is fairly resistant to primary infection of apple scab, both fruit and foliage are very susceptible to later or secondary infection by this disease, providing even a few apples bearing the primary scab lesions are present in the tops or upper hemispheres of the trees, and the weather conditions become favorable, as they certainly did in the summer of 1927, for development of secondary scab infection.

Another minor but interesting test was undertaken in order that we might intelligently answer questions so frequently asked of us by owners of a few fruit trees, or small orchards of newly-planted or young, growing trees. This was a comparison of results of application of dusts with a small but efficient hand-power dusting machine, with the results of use of a spraying outfit, and with the results, as well, of the use of a power dusting outfit.

Results of Dusting in Comparison with Spraying

On page 22 is presented in the briefest manner possible some of the results of dusting as compared with spraying at Dale View Farm, as well as in comparison with results of neither spraying nor dusting, occurring on the farm immediately adjoining and within a couple of "stone-throws" of one of the most important sections of our experimental work.

Relative Costs of Dusting and Spraying

The cost of dusting the 20 acres of orchard at Dale View Farm, in 1927, was actually less than the cost of spraying the same area in 1926. This may be somewhat difficult to believe, but it is true.

The average time required for each separate spraying, in 1924-25-26 was approximately six and one-half days, or 52 hours. The average time for a single dusting, in 1927, was approximately ten and one-half hours.

With practically the same production of apples in 1926 and 1927 (3200 bushels each season), the cost of spraying materials, per bushel of apples, in 1926, was 3.1 cents; the cost of applying the sprays 6.8 cents, making a total for spraying, per bushel of apples, of 9.9 cents.

The cost of dusting materials per bushel of apples, in 1927, was 4.1 cents—just one cent more per bushel than the cost of spraying chemicals the preceding year. However, the cost of applying the dusts, per bushel of apples, in 1927, was only 3.3 cents—a little less than one-half the cost per bushel for applying the sprays in the preceding season—making a total cost for dusting, per bushel of apples, of 7.4 cents.

Thus, to summarize, we find the total cost of spraying in 1926 to be 9.9 cents, as compared with 7.4 cents for dusting in 1927, for each bushel of apples produced.

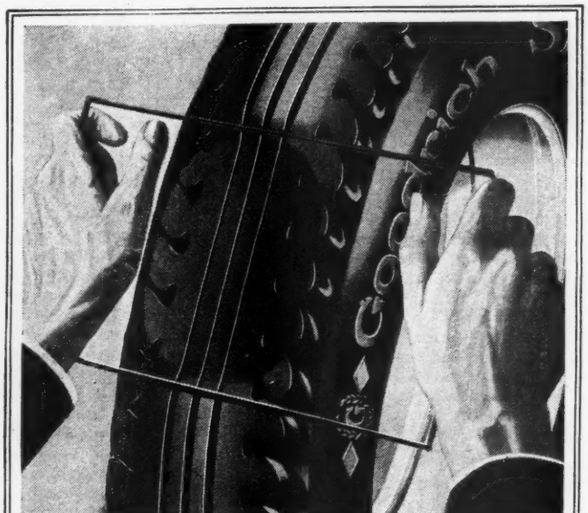
Our expense of dusting at Dale View Farm, in 1927, was relatively low because of the fact that dusts of much modified strength so far as the proportion of sulphur was concerned, were used on varieties such as Jonathan which possess peculiar resistance to infection by apple scab. That such modifications were employed should not be construed as a recommendation for growers in general to attempt to use these unusually "dilute" formulas. Absolutely thorough work in applying the dusts, as well as timeliness, is necessary where large proportions of lime and small proportions of sulphur are composing the dust.

While our spraying at Dale View Farm, for a number of years, constantly has given us very fine results, I can truthfully state that we never before produced more sound, better colored, finer finished apples than by dusting in the season of 1927. These experiments are to be continued during the season of 1928.

(The tables accompanying this article will be found on the preceding page.)

By this Discovery

Goodrich prevents wasteful tread wear on millions of cars



THE PLATE GLASS TEST *Pressing this heavy glass against the tread shows the action of the rubber under load. The deep triple grooves close up, preventing distortion. The sharp-edged safety blocks grip the ground.*

WHAT you see under the plate glass, happens about 300 times every minute when you drive your car.

First, the tread yields as it meets the road, for balloon tires are soft.

So the Goodrich Silvertown tread is flexible — triple grooved — hinge-centered — and it yields without distortion.

Second, the weight pressing down on the tire spreads toward the outer edges of the tread—the "shoulders."

So the Goodrich Silvertown tread has massive shoulders—continuous tracks of rubber—with the sharp-edged, all-direction grip of the safety blocks along the sides.

Such a tread is smooth-running. It doesn't "pile up." Because it is undistorted, it is free from the uneven, choppy wear which tire men call "cupping."

By this one discovery, the hinge-center tread, Goodrich puts thousands of extra miles in Silvertowns.

Naturally, it takes unusual inner strength to equal the life of such a tread. This strength is assured by two important processes in Silvertown manufacture.

All the 5,000 cords in these tires are stretch-matched and pressure filled with rubber.

Then all the rubber in every Silvertown is accurately toughened from inside and outside both, by the Goodrich Water Cure.

Goodrich dealers everywhere are ready to equip you with Silvertowns.

Goodrich Silvertowns

"BEST IN THE LONG RUN"

THE B. F. GOODRICH RUBBER COMPANY
Established 1870 · Akron, Ohio
Pacific-Goodrich Rubber Company, Los Angeles, California
In Canada: Canadian Goodrich Company, Kitchener, Ont.

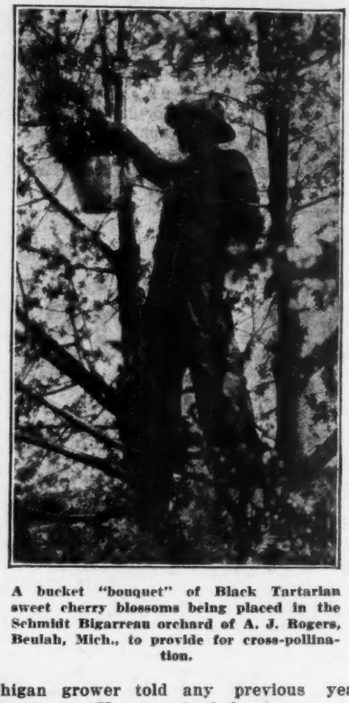
LISTEN IN EVERY WEDNESDAY NIGHT, *Goodrich Radio Hour 9:30 P. M. Eastern Standard Time, over WEAF and the Red Network*

Putting the Honey Bee to Work

(*Continued from Page 6*)

a single pound of honey. It is apparent that even a very slight saving of time or labor becomes in the aggregate of great importance to the colony—not only by increasing the production of honey, but by the more important task of providing for pollination. For pollination purposes, the place for the colonies during blossoming time is in or near the orchard—not in an apiary a half mile or more from the orchard.

Success with bees as pollinizing agents, where colonies are distributed through an orchard, is largely determined by the man using them having a knowledge of bee behavior. Only strong colonies should be used. A weak colony of few bees has little value. Proper care must be exercised in moving them. Most beekeepers have found that even where colonies are moved but a short distance pneumatic tire equipment is absolutely essential. Careful handling will prevent the breaking of the combs.



A bucket "bouquet" of Black Tartarian sweet cherry blossoms being placed in the Schmidt Bigarreau orchard of A. J. Rogers, Beulah, Mich., to provide for cross-pollination.

Recently a Michigan grower told me of his sad experience. He purchased bees for use in his orchard. He did not appreciate the importance of careful handling, and in moving them to his orchard, the combs in six colonies were broken down—practically ruining them.

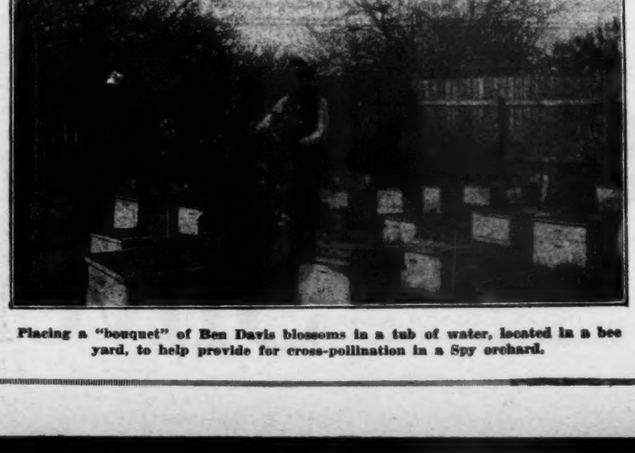
To avoid the hazards of arsenical poisoning to the bees by spraying, the colonies should be placed in the orchard following the last spray before blossoms open and removed before spraying is resumed. Experience has proved that this is not always possible, and often the center blossom in the cluster is open before the "pink" application is completed. Withdrawing the arsenate from the spray material for the balance of the application will eliminate the chance of bee poisoning. When dusting is practiced, care should be exercised that poison dusts do not drift on to clover, dandelion or other honey plants nearby that are being worked by bees.

Bees Set Crop in Pear Orchard

Near Ann Arbor, Mich., the Huron Farms Corporation have an orchard of several acres of pears. This orchard is 16 years of age. It has been blossoming regularly for several years, but the crops have been extremely light. The orchard is in a good state of vigor. The varieties of Bartlett, Keiffer, Sheldon, Lawrence and Flemish Beauty provide for ample cross-pollination. A year ago at the beginning of the blossoming period, arrangements were made with Floyd Markham, president of the Michigan Beekeepers' Association, to establish a yard of bees near the orchard. At harvest time the yield of pears from this small pear orchard was nearly a thousand bushels. The largest crop in any previous year had been 18 bushels.

Use Bees in Peach Orchard

Friday Brothers at Coloma, Mich., planted 10 acres to J. H. Hale peaches in 1917. At that time it was not known that the J. H. Hale was a self-sterile variety. Year after year the trees produced only a few scattering peaches and many "buttons" (small peaches with undeveloped pits). As trees died out here and there through the orchard, cross-pollination was provided by replacing them with trees of Elberta or South Haven. In walking through this orchard in September of 1926, one of the owners made the remark that the total yield from the entire block would probably not be over 10 bushels. It was easy to agree



Placing a "bouquet" of Ben Davis blossoms in a tub of water, located in a bee yard, to help provide for cross-pollination in a Spy orchard.

Travel the D&C Lake Lines Great Lakes First!

D. & C. Steamers Guided by Radio Compass Signals

To Lovers of Sea, Sky and Drifting Clouds:

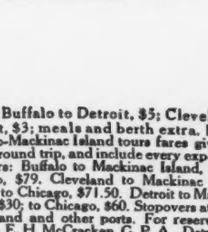
Summer is just around the corner, and it is in order to suggest a cruise on the Great Lakes as part of your vacation.

We would be pleased to help you plan an outing of two, four, six or eight days' duration on the Lower Lakes, and supply you with pictures and descriptions of pleasant places: Niagara Falls, Mackinac Island, and others.

If you contemplate an automobile tour, plan to make part of the journey by boat. Our overnight service between Buffalo and Detroit; Cleveland and Detroit, is used extensively by automobilists. If you desire a longer voyage our line between Cleveland and Chicago, via Detroit, Mackinac Island and St. Ignace, will appeal to you. Dancing, concerts, radio entertainments, deck games on shipboard—not a dull moment.

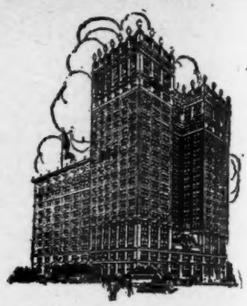
A. A. SCHANTZ, *President*

D&C Lake Lines



Fares: Buffalo to Detroit, $5; Cleveland to Detroit, $3; meals and berth extra. For the Chicago-Mackinac Island tours fares given are for the round trip, and include every expense on steamers: Buffalo to Mackinac Island, $49; to Chicago, $79. Cleveland to Mackinac Island, $41.50; to Chicago, $71.50. Detroit to Mackinac Island, $30; to Chicago, $60. Stopovers at Mackinac Island and other ports. For reservations, address E. H. McCracken, G. P. A., Detroit and Cleveland Navigation Co., Detroit, Mich.

Fast freight service on all divisions at low rates.



900 Rooms—All with Servidors

HOTEL FORT SHELBY

Lafayette and First, DETROIT

Practically at the door of this famous hotel are the theaters, shops, financial and wholesale districts—all downtown Detroit. Very comfortable rooms, $2.50, $3, $4 a day; also larger, more richly furnished rooms and suites. Garage near; guests' cars delivered without special service charge.

J. E. Frawley, Manager

The NEIL HOUSE

Opposite Ohio's Historic Capitol

In Columbus—

A hotel where there is the happy combination of good food and courteous service.

655 Rooms and Every Bedroom with Private Bath.

Rates, $2.50 Upward

F. W. Bergman, Manager

COLUMBUS, OHIO

S. High St. Opposite Capital

HOTEL EMPIRE

Broadway at Sixty-Third Street, New York

In the heart of the automobile district

RATES

Single room with private toilet, $2.50
Single room with private bath, $3.50
Double room with private bath, $5.00

M. P. MURTHA, General Manager.

HOTEL Imperial

DETROIT'S Most exclusive Hotel. Conveniently situated Peterboro at Woodward

Rates: from THREE DOLLARS per DAY

All Rooms with Bath

JOHN N. ANHUT, President

with him, as I was having considerable difficulty in locating a single peach to eat.

It should be remembered that this orchard is favorably located on a good orchard soil and that the Michigan peach crop was the largest that year it had been since 1916. Last year at blossoming time insect activity was greatly increased in the Friday Brothers' orchards by locating 20 colonies of bees in them. The set of fruit in the apple and cherry orchards was materially increased. The first time in its history the J. H. Hale block came through with a crop. Because of their age and neglect, the trees were not in the best state of vigor to produce peaches of large size. However, the crop was readily sold on the Benton Harbor market and netted well over $1000.

Handy Fruit Package Increases Sales

(*Continued from Page 4*)

basket." We followed this up immediately and used a plan of keeping almost our entire store stock of apples in this type of baskets, with the handles turned up. All apples that we sold by the pound into paper bags were taken from the stock in these baskets, which were easily kept filled by the immediate pouring together of part baskets.

We bought our baskets from wholesale paper houses at a cost of around seven cents in lots of 500. If people cared to bring the baskets back, we made an allowance for them on the next sale. Many people who no doubt had been in the habit of buying a quarter's worth of apples in a bag occasionally, that might last a few hours in the average home, came to our store almost as regularly as once a week throughout the season. The same people kept that habit through the remaining three years that our store was operated.

Price a Minor Factor

We found that it was the size, attractiveness, convenience and suggestion of handles up, ready to go, that sold this package of apples and not a cut in price. When we first discovered the value of this method, the price on a basket of apples had been put at the regular price per pound of the fruit with the cost of the basket added. The question of whether the customer was getting a lower price per pound in the basket quantity than in small paper bags was hardly ever raised.

Lowest price is not the largest selling force.

Because our market at the orchards developed greatly and wholesalers became willing to pay us for our surplus what we thought the apples were worth, we discontinued our city store in Des Moines. We liked to have less to take our attention away from home operations.

However, the result of our experience was so marked that I would like to pass it on for the benefit of the apple industry.

The customers go into the average neighborhood grocery store under present conditions and see nothing in the apple line except one or two barrels or boxes of slow moving apples sold off of the top until the apples are mainly out of sight. If the customers buy a few pounds of these apples, that have likely been in a warm room for days, it is very easy for them to become disgusted with their lack of crispness and flavor. They conclude that apples are a rather poor common fruit and they go without them or turn to other kinds of fruits.

It would be quite different if the merchant would transfer his barrel, box or bushel basket of apples to inexpensive packages adapted to city life, just as soon as the apples arrive from the wholesale house or grower. A barrel will fill seven or eight of the five-inch market baskets. The 18-pound market basket will have several times the display value of the barrel to start with, and will keep this display value until the last full basket is out of the store. The handles up, can be constantly pushing the rapid, fresh sale of the apples. The consumer will have firm, good apples in the home all week and will come back for more. The grocer will increase sales and eliminate waste. The merchant will have an extra cost in providing baskets but he will save paper sacks and lost over-weight from many pound sales.

Five-Inch Basket a Good Size

The retailer might be puzzled about what sized basket of apples to push. In our own experience I believe that we hit upon the upper limit of size, the five-inch double-handle market basket holding 18 pounds heaped. This size made weight that was not excessive for carrying in the street car or to the waiting auto. The price did not have to run too much for the average worker to pay at one time. The package contained enough apples to last a small family several days but not so long as to cause waste in the heat of modern city dwellings.

Peck baskets might be used where the trade comes mostly from apartment houses, but smaller containers would increase the cost and restrict consumption more than necessary.

Apple growers might pack in smaller containers than the standard apple box or bushel basket, to be retailed in the original package. Here are some of the objections to that practice:

In regular packing it would be difficult to fit the various sizes of apples into a smaller closed container than the standard apple box. The cost of small containers strong enough to go through the regular channels of transportation, storage and trade is excessive per unit of apples. Storage charges and wholesale margins on small packages run high per unit. The wholesale trade generally handles apples packed in barrels on a much smaller margin per bushel than even the standard box or bushel basket.

Growers who sell direct to retailers, wholesale fruit distributors and basket manufacturers would have a vital interest in a united movement, co-operating with the coming advertising campaign of "Apples for Health, Inc.," in urging the stores selling apples to improve their methods. Orchards operating roadside markets could use the described plan to displace small bag sales with family sized packages.

Short cuts to the consumer, where real advantages to use them are present, are a fine thing. Selling at the orchard to auto trade is one of the best of these opportunities.

The great city population will continue to be supplied mainly through the wholesaler and the neighborhood grocery store. We should not try to tear down existing agencies of distribution. We want only to aid in making them more efficient for the benefit of all.

The *best* gasolines become *better* when ETHYL is added

RACING car drivers *can't* take a chance with their engines. Before a race they test their cars with the best gasoline obtainable. Then they add ETHYL fluid—the anti-knock compound—to develop the last ounce of power for speed and safety.

Similarly, leading oil companies are adding ETHYL fluid to the gasoline produced for the general motoring public, so that you too can increase your car's performance under all driving conditions.

This fuel is called Ethyl Gasoline and is sold at pumps which display the emblem shown below.

Read the facts about Ethyl Gasoline given below. Remember that even the best gasolines become better when the ETHYL ingredient is added. Then give ETHYL a trial.

What Ethyl Gasoline is and does

ETHYL GASOLINE was developed by General Motors research to provide a more efficient fuel for gasoline engines.

It is formed by adding ETHYL brand of anti-knock compound (ETHYL fluid) to good motor gasoline in an amount sufficient to utilize the higher compression created by carbon deposits or advanced engine design.

ETHYL fluid is a concentrated liquid containing tetraethyl lead which has the property of controlling the combustion rate of gasoline.

Only oil refining companies licensed to sell Ethyl Gasoline can mix ETHYL fluid with their gasoline.

Ethyl Gasoline is colored red for identification. The color has nothing whatever to do with its performance.

Ethyl Gasoline increases the performance of any automobile engine—whatever its compression—whatever the climate or other driving conditions.

If your car is designed to operate on ordinary gasoline, the use of Ethyl Gasoline will:

Eliminate "that knock" and power loss.

Make carbon deposits a source of extra power. For carbon increases compression and Ethyl Gasoline is the high compression fuel.

Give a smoother and better pulling engine, particularly on hills and heavy roads.

Reduce gear-shifting and increase acceleration, thereby making traffic driving easier.

Cut down vibration, thereby reducing engine wear and tear and depreciation.

If your car is a high compression car, just remember that Ethyl Gasoline made it possible and its use is necessary to obtain maximum performance.

Ethyl Gasoline is the yardstick by which other gasolines are measured.

ETHYL GASOLINE CORPORATION
25 Broadway, New York City 56 Church St., Toronto, Canada

ETHYL GASOLINE

ETHYL BRAND OF ANTI-KNOCK COMPOUND ETHYL GASOLINE CORPORATION NEW YORK, U.S.A.

Knocks out that knock

PARKER'S HAIR BALSAM

REMOVES DANDRUFF
STOPS HAIR FALLING

Has been used with success for more than 40 years.

RESTORES COLOR AND BEAUTY TO GRAY AND FADED HAIR

60¢ & $1.00 at all druggists

HISCOX CHEMICAL WORKS
PATCHOGUE, N.Y.

When washing hair always use Floreston Shampoo

Get Low Prices on Berry Boxes and Baskets

Write for our **Free Catalog!** Shows you how you can save money by buying direct from *the largest Berry Box and Basket Factory in the Country.*

New Albany Box & Basket Co., Box 101 New Albany, Ind.

RED GOLD Sugar-Saver Strawberries

rich, sweet, need only half as much sugar. Taste like wild berries. Grow to large size, up to 8½ in. around. Very productive. Big yield from small bed. Send us your name with 10 cents or not, as you please, and we will send you 2 strong plants and our catalog.

GARDNER NURSERY CO.
Box 812 Osage, Iowa

FREE

QUALITY CHICKS Chicks from winter lay ng, farm raised, mature stock, S.C. White Leghorns, R. I. Reds, Barred Rocks, White Orpingtons, Anconas, Black Jersey Giants, White Wyandottes, White Plymouth Rocks, Black Minorcas; Pekin and Indian Runner Ducks: $15.00 per 100 up. Live Delivery guaranteed. Parcel Post prepaid. Hatching eggs $8.00 per 100 up. Several breeds rabbits. Circular free. Shipments will be made from one o our nearest associated hatcheries.

GLEN ROCK NURSERY & STOCK FARM 714-D, Ridgewood, N. J

Classified Advertisements

ADVERTISING RATES, 15 CENTS A WORD

Write advertisement on separate sheet. Please enclose cash with order. For advertisements addressed in care of this publication, allow 5 words for address.

SPECIAL NOTICE

All advertising copy, discontinuance orders or change of copy must reach this office by the 10th of this month for next issue.

Address
AMERICAN FRUIT GROWER MAGAZINE
53 West Jackson Boulevard, CHICAGO

AGENTS—SALESMEN WANTED

NO DULL TIMES SELLING FOOD, PEOPLE must eat. Federal distributors make big money, $3000 yearly and up. No capital or experience needed; guaranteed sales; unsold goods may be returned. We furnish you with sample case, license and free samples for customers. Sure repeat orders. Exclusive territory. Ask now: Federal Pure Food Co., W-2307, Archer, Chicago.

A PAYING POSITION OPEN TO REPRESENTATIVE of character. Take orders shoes-hosiery direct to wearer. Good income. Permanent. Write now. Tanners Shoe Mfg. Co., 813 S. C. St., Boston, Mass.

YOU ARE WASTING TIME WORKING FOR other people. Let us show you how to control your own business and make $100 a week. Capital unnecessary; immediate profits. American Products Company, 1728 Monmouth, Cincinnati, O.

WE WANT MEN TO LOOK AFTER OUR ESTABLISHED business, and take orders for groceries, paints, auto oils, from consumers. No experience necessary to make big money. The wonderful proposition you have always wanted. Write Loverin and Browne Co., E1805 So. State, Chicago.

BUSINESS OPPORTUNITY

CAPITAL—FOR COPY OF "THE PROMOTERS' Hand Book," a leaflet on financing, send $1.00 to Amster Leonard, East Orange, N. J.

FARM WANTED

WANTED TO HEAR FROM OWNER OF LAND for sale. O. Hawley, Baldwin, Wis.

FARMS AND ORCHARDS

ORCHARD—3000 APPLE TREES, 18 TO 23 years old, 300 peach trees, 65 black walnut trees, 30 acres of timber, 160 acres in all. 6-room house with modern conveniences. On the outskirts of the town of Bedford, which is on the Lincoln Highway. For illustrated folder describing this bargain address Box 553, Windber, Pa.

IMPROVED FARMS FOR RENT IN MINNESOTA, North Dakota, Montana, Idaho, Washington and Oregon. Make a trip and see the growing crops. Cheap round trip homeseeker's tickets. Write for free books. E. C. Leedy, Dept. 973, Great Northern Railway, St. Paul, Minn.

FOR SALE—35-ACRE BEARING APPLE ORchard in "Get Well Country," of New Mexico. A. G. Woodford, 1600 Rowan St., Louisville, Ky.

OZARKS, 40 ACRES IN FRUIT BELT, $220, $10 monthly. Albert Zimmerman, 1802 N. Fifth, Kansas City, Kansas.

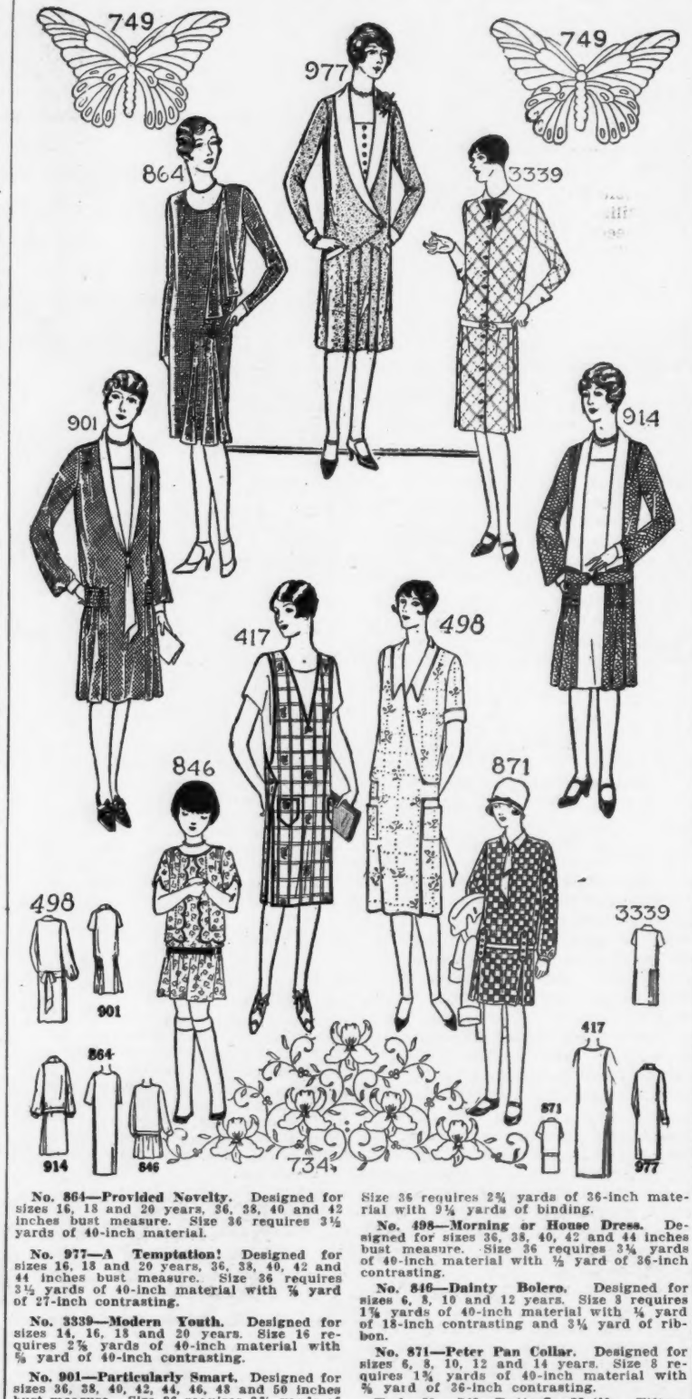
FOR RESULTS

IS THERE ANYTHING YOU WANT TO BUY or sell? Need help? Want a position? For results advertise in the American Fruit Grower Magazine classified columns. Over 250,000 subscribers. Rate 15c per word, cash in advance

The May Patterns

No matter whether the orchard woman spends her entire summer at home or whether she spends part of it away from her domestic duties, she should have included in her wardrobe one or more of the fashionable prints. Printed materials of all kinds, some in gay colors, others in more neutral shades, are available. The polka dot, in combinations of white on black, white on blue, blue on white, blue on gray, and others, is being shown in all the smart shops.

We are presenting on this page a number of dress designs which would be very attractive made up in any of the new prints.



No. 864—Provided Novelty. Designed for sizes 16, 18 and 20 years, 36, 38, 40 and 42 inches bust measure. Size 36 requires 3½ yards of 40-inch material.

No. 977—A Temptation! Designed for sizes 16, 18 and 20 years, 36, 38, 40, 42 and 44 inches bust measure. Size 36 requires 3½ yards of 40-inch material with ⅞ yard of 27-inch contrasting.

No. 3339—Modern Youth. Designed for sizes 14, 16, 18 and 20 years. Size 16 requires 2⅞ yards of 40-inch material with ⅝ yard of 40-inch contrasting.

No. 901—Particularly Smart. Designed for sizes 36, 38, 40, 42, 44, 46, 48 and 50 inches bust measure. Size 36 requires 3⅜ yards of 40-inch material with ⅝ yard of 36-inch contrasting.

No. 914—Looking Slender. Designed for sizes 36, 38, 40, 42, 44, 46, 48 and 50 inches bust measure. Size 36 requires 3¼ yards of 40-inch material with 1¼ yards of 27-inch contrasting.

No. 417—Truly Practical. Designed for sizes 36, 40 and 44 inches bust measure. Size 36 requires 2¾ yards of 36-inch material with 2¼ yards of binding.

No. 498—Morning or House Dress. Designed for sizes 36, 38, 40, 42 and 44 inches bust measure. Size 36 requires 3¼ yards of 40-inch material with ½ yard of 36-inch contrasting.

No. 846—Dainty Bolero. Designed for sizes 6, 8, 10 and 12 years. Size 8 requires 1⅛ yards of 40-inch material with ¼ yard of 18-inch contrasting and 3¼ yard of ribbon.

No. 871—Peter Pan Collar. Designed for sizes 6, 8, 10, 12 and 14 years. Size 8 requires 1⅜ yards of 40-inch material with ⅜ yard of 36-inch contrasting.

Emb. No. 749—Butterfly Motifs. Fifteen butterfly motifs are provided in pattern, 3 butterflies in each motif. The motifs are 4¼ inches wide and 3 inches high. Suitable for dresser sets, luncheon sets, table runners, etc.

Emb. No. 734—Floral Sprays. There are 4 sprays provided in this transfer pattern, measuring 19 inches wide and 8 inches high. Suitable for curtains, sofa cushions, draperies, dresses, etc.

Patterns may be secured by mail, at 10 cents each, postpaid, from AMERICAN FRUIT GROWER MAGAZINE PATTERN SERVICE, 22 East 18th St., New York.

HELP WANTED

DO YOU NEED MORE MONEY? LET ME ADD $30 a week to your pay without interfering with your present occupation. Interesting, pleasant work. Particulars free. Albert Mills, 1734 Monmouth, Cincinnati, O.

WOMEN EARN $15 DOZEN SEWING DRESSES, experience unnecessary, no selling, material cut, instruction furnished. Stamped envelope brings particulars. Royal Dress Co., Jamaica, New York.

MEN—BIG PAY WORKING ROMANTIC SOUTH America. Fare, expenses paid. South American Service Bureau, 14,600 Alma, Detroit, Mich.

HELP AND INSTRUCTION

MEN—18 UP. $1700 TO $2700 YEAR. MAIL Carriers-Railway Postal Clerks. Steady positions. Vacations. Sample coaching free. Write immediately. Franklin Institute, Dept. D77, Rochester, N. Y.

HELP AND INSTRUCTION—FEMALE

WANTED—GIRLS—WOMEN, 17 UP. LEARN gown making at home. $35.00 week. Learn while earning. Sample Lessons Free. Write immediately. Franklin Institute, Dept. D545, Rochester, N. Y.

EARN $25 WEEKLY SPARE TIME, WRITING for newspapers and magazines. Exp. unnecessary. Copyright book, "How to Write for Pay," free. Press Reporting Inst., 979, St. Louis, Mo.

MEN, GET FOREST RANGER JOB; $125-$200 month and home furnished; hunt, fish, trap. For details write Norton Inst., 1405 Temple Court, Denver, Colo.

MOTORCYCLES.

MOTORCYCLE BARGAINS—USED, REBUILT. Guaranteed. Shipped on approval. Terms. Catalog free. Clymer, Denver, Colo.

PERSONAL

EPILEPSY CURABLE? DETROIT LADY FINDS complete relief for husband. Specialists home and abroad failed. Nothing to sell. All letters answered. Mrs. Geo. Dempster, Apt. 1, 6900 La Fayette Blvd., West, Detroit, Mich.

RHEUMATISM—I WILL GLADLY TELL ANYone how I was cured in four days after two years' terrible suffering. It makes no difference what form you have, if you are suffering. Write Dept. Z, Box 147, Little Rock, Ark.

PLANTS

LARGE FROSTPROOF CABBAGE, BERMUDA onion and tomato plants: 200, 60c; 500, $1.25; 1000, $2.00. Pepper plants, 100, 50c; 500, $1.50. All prepaid. Jacksonville Plant Co., Jacksonville, Texas.

VEGETABLE PLANTS — FROSTPROOF CABbage, Bermuda onion and tomato plants. Postpaid 500, $1.25; thousand, $2.25. Express collect, dollar thousand. Catalog free. Carlisle Plant Farms, Valdosta, Ga.

SATISFACTION GUARANTEED—LEADING VArieties field grown Cabbage, Onion, Tomato plants, $1.00 per 1000. Southern Plant and Seed Co., Valdosta, Ga.

POSITION WANTED

PRACTICAL ORCHARD MAN, AGE 30, WITH ten years managerial experience available. References. Address Box 41, American Fruit Grower.

TOBACCO

TOBACCO—KENTUCKY SWEETLEAF, MELLOW, aged. Smoking 10 pounds $1.40. Chewing, $1.75. Pay when received. Kentucky Farmers, Pryorsburg, Ky.

WOOL WANTED

WOOL WANTED—GOOD PRICE FOR ANY quantity. Please write for reliable quotation. S. H. Livingston, Succ. Keystone Hide Co., Dept. AFG., Lancaster, Pa.

Our Summer Fashion Magazine, just off the press, is the most interesting issue we have ever published. The styles are so very attractive, and the material so appealing for Summer wear.

There are styles for women, the miss and the kiddies. And valuable articles about Vacation Trips, What the Stout Woman Should Wear and Why, Hints for the Short Women, etc., etc.

Send 10 cents for your copy today, addressing Fashion Dept., AMERICAN FRUIT GROWER MAGAZINE, 22 East 18th St., New York, N. Y.

Care of the Peach Orchard

(*Continued from Page 7*)

hardy fruit buds, but also in coloring the fruit and in reducing susceptibility to brown rot. Peach trees require pruning to secure more uniformly strong, well-formed trees; to give better distribution of fruiting wood; to assist in the maintenance of vigor; and to remove weak, injured, dead, or pest infested branches.

Amount of Pruning

The amount of pruning, both heading and thinning, but more particularly the severity of the heading, is regulated by the prospects of a crop. In case a heavy crop is expected, the tree may be headed back quite severely, removing perhaps one-half to two-thirds of the previous year's growth, and with it a large number of the fruit buds on the ends of the shoots. This procedure lightens the subsequent work of thinning the crop. The smaller the prospective crop, the less severe the heading should be, in order to insure a full crop. In view of the danger from late frost, it is practically impossible to tell how large a crop will survive the winter. It is therefore advisable to wait until the trees are in bloom, at which time pruning can be regulated to much better advantage.

When the entire crop is destroyed, the grower may take advantage of the situation and head the trees severely, cutting back into two-year-old wood. This may be needed, as the peach tree bears fruit on one-year wood which tends to grow further out on the ends of the branches each year. The exact amount of pruning may be greater or less, depending on the shape and condition of the tree. If a similar treatment was required the previous year, the heading need not be quite so severe, though much of the past season's growth may be removed.

It should be thoroughly understood that cutting back into wood two, three, or more years old lessens the likelihood of fruit bud formation and a crop the following year, although weather conditions may be favorable. Severe cutting generally means a rank growth, which should be thinned in early summer to assist in the formation of fruit buds for a crop the next year. More moderate cutting back is usually better in order to maintain regular fruiting.

Soil Management in the Bearing Orchard

Cultivation of the peach orchard as commonly practiced early in the season is beneficial and may be recommended, except where there is danger of the soil being washed away. Early cultivation and the sowing of a leguminous cover crop to protect the soil during the fall and winter and to be plowed under the following spring usually gives good results where nitrogen is needed. The peach is very tolerant of acid and does not respond to applications of lime. Moreover, there is seldom any beneficial results following the use of phosphorus and potassium. Indirectly, however, lime, phosphorus and potassium may assist in the growing of leguminous cover crops which store nitrogen in the soil. Under such conditions, these elements are valuable.

Nitrogenous fertilizers are required by the peach. Average size trees should receive about three pounds of nitrate of soda, or two and one-half pounds of sulphate of ammonia, and the material should be broadcasted on the ground under the branches, keeping it away from the trunk.

Nitrogen applications to peach trees should be postponed until there is little danger of late killing frosts and prospects for a crop are assured. This applies only to orchards in moderately good condition, which will require no fertilizer treatment in case no crop is borne. If the trees are very weak and cannot make good growth even without a crop, heavy applications should be made, and it makes little difference at what time in the spring they are applied. The average peach orchard, and particularly those peach orchards that have received previous fertilizer treatment, should be left until danger from late frosts is negligible, because it is a waste of good fertilizer to apply it when it may not be needed, and also because the early application tends to increase the cost of crop thinning in case the tree bears heavily.

Thinning the Fruit

When heavy crops are produced, thinning in June should be generally practiced. Winter injury may be so great and the fruit so scattered that thinning is unnecessary. But when trees are heavily loaded, thinning the fruits until they are four to six inches apart leads to greater uniformity and usually enables the grower to market the fruit more readily and at higher prices. It also favors hardiness under certain conditions.

Thinning should be done by hand when the peaches are about the size of the thumb or after the regular late May or early June drop. The cost of thinning will vary in different localities but should average about 15 cents per tree. A profit is generally shown from hand thinning by the difference in quality, uniformity in size and the price received for high grade fruit.

Harvesting and Grading

Peaches from long distance shipment should be picked when the fruit is firm to the touch and before it has begun to soften, as in later stages of ripening. When the fruit begins to lose the green color and to assume a yellowish tinge or a creamy white shade, depending on the variety, it has then usually reached the degree of maturity required for holding a relatively long time.

Every precaution should be taken to prevent bruising or doing mechanical injury to the fruits. The slightest bruise or break of the skin will usually result in decay and total or partial loss. Promptness and care should characterize each and every operation in the harvesting of the peach crop.

Upon arrival at the packing shed, the peaches are unloaded and placed before the graders. Both hand and machine grading is used. The over-ripes and culls are sold to local peddlers or sent to the canners. In general, better grades and standards should be adopted by growers. The closer these are adhered to and the greater their use among growers concerned, the more likely the producers are to build worth while reputations and to receive profitable prices over a period of years. A more general adoption of some definite and recognized standards will facilitate the selling and handling of the crop.

(Note.—The serious pests of the peach, with control measures for each, will be covered in the third and concluding article of this series, which will appear in the June issue.)

The "Time to Re-Tire" Boy, the best known trade-mark in the tire industry, is the familiar symbol of the enduring quality of Fisk Tires

All the qualities that mean tire comfort and slow, even wear are built into Fisk *"Fillerless"* Cord Tires by original and exclusive features of construction.

Whether you want the utmost that a tire can give, —mileage at the lowest cost,—or initial price, we have the tire that meets your need.

Fisk "Time to Re-Tire" Boys broadcast over 36 of the National Broadcasting and Associated Stations, Monday Evenings, 10:30 Eastern Standard Time; 9:30 Central and Pacific Coast Time.

"FISK SAYS IT WITH MILEAGE"

FISK TIRES

Index to Advertisements

The concerns whose advertisements appear listed below are equipped to give prompt and satisfactory service to the American fruit grower. Most of them issue literature that is freely at the disposal of our subscribers. It is to the advantage of all that when writing to an advertiser you use the address exactly as it appears in the advertisement, and that you state in your letter: "I Read Your Advertisement in AMERICAN FRUIT GROWER MAGAZINE."

NOTE Consult the CLASSIFIED DEPARTMENT (self indexed), on page 26 for Classification not listed below.

AUTOMOBILES

Buick Motor Company ..... Second Cover
Chevrolet Motor Company 17
Chrysler Motor Company 19
Oakland Motor Car Company 13
Reo Motor Car Company 8

AUTO BODIES

Fisher Body Corporation 21

AUTO TRUCKS

Graham Brothers ..... Third Cover
International Harvester Company 11
Reo Motor Car Company 8

BATTERIES

National Carbon Company ..... 12 & 20

CIDER PRESSES

Hydraulic Press Manufacturing Company 20

DUSTERS

Shunk Manufacturing Company 29
Peerless Dust Gun Co. 20

FLASHLIGHTS

National Carbon Company ..... 12 & 20

FRUIT PACKAGES

Lindabury, H. R. and Sons 20
New Albany Box and Basket Company 26
Pierce-Williams Company 20

GASOLINE

Ethyl Gasoline Corporation 25

HAIR BALSAM

Hiscox Chemical Works 26

HOTELS

Fort Shelby Hotel 24
Hotel Empire 24
Hotel Imperial 24
Nell House, The 24

INSECTICIDES

Grasselli Chemical Company 22
Sherwin-Williams Company ..... Back Cover
Tobacco By-Products and Chemical Corporation 20

LAKE TRANSPORTATION

D. & C. Navigation Company 24

MULCH PAPER

International Paper Company 9

NURSERY STOCK

Gardner Nursery Company 26
Glen Rock Nursery and Stock Farm 26

PAINTS & VARNISH

Sherwin-Williams Company ..... Back Cover

PEANUT BUTTER

Beech-Nut Peanut Butter 20

PUBLIC UTILITIES

American Telephone and Telegraph Company 10

SMOKERS' SUPPLIES

Camel Cigarettes 15
Chesterfield Cigarettes 29
Edgeworth Cut Plug Tobacco 18

SPRAY EQUIPMENT

Hydraulic Press Manufacturing Company 20
Myers, F. E., & Bro., Company 18
Willson-Goggles, Inc. 18

TIRES

Fisk Tire Corporation 27
Goodrich Rubber Company 23

TRACTORS

American Farm Machine Company 18
International Harvester Company 11
Shaw Manufacturing Company 20
Standard Engine Company 20

Do a Favor to Your Neighbor

There is a neighbor living near you, a fruit grower. You know he is trying to do his best, for he frequently asks you what to do and when to do it, and you are always glad to give him the information.

If you think he would be benefited by the expert advice he would receive every month through the AMERICAN FRUIT GROWER MAGAZINE, why not call it to his attention? He would thank you for the courtesy.

When you are through reading this issue, loan this copy to that neighbor, first placing a big black "X" in the margin opposite this coupon. He'll get the point and grasp this opportunity to better his methods. Better reach for your pencil and do it now.

Your Neighbor, in all likelihood, will avail himself of the opportunity to use this coupon

AMERICAN FRUIT GROWER MAGAZINE
53 West Jackson Boulevard, Chicago, Illinois

Gentlemen: I enclose a dollar. Send me AMERICAN FRUIT GROWER MAGAZINE three years.

Name .....

Address .....

Thin Your Fruit for Profit

(Continued from Page 5)

prevalent with some growers that the quality of the fruit is improved by thinning at the expense of the total yield. Consequently, the net results might not be profitable, particularly with varieties that are sold under one grade or else in bulk. There is much evidence on record that in most instances this is not true. Still, to test this consideration, a block of 26 large Gano trees were thinned and compared with a large number of adjoining non-thinned trees. The results are found in Table 3.

Table 1. Apple Thinning—Average of 10 Experiments in Eastern and Central States

Per Cent No.1 Not Thinned	Per Cent No.1 Thinned	Per Cent No. 2 Not Thinned	Per Cent No. 2 Thinned
43	71	45	23

Per Cent Culls Not Thinned	Per Cent Culls Thinned
6	3

Table 2. Apple Thinning—Ingrams

Paul H. Shepard's orchard, Independence, Mo.

Yield of 100 Ingram Trees—Thinned

97	barrels No. 1 @	$4.00	$388.00
12	barrels No. 2 @	$3.00	36.00
3.5	barrels culls @	$ .60	2.10
Total 112.5	barrels		$426.10

Yield of 100 Ingram Trees—Not Thinned

51	barrels No. 1 @	$4.00	$204.00
40	barrels No. 2 @	$3.00	120.00
18	barrels culls @	$ .60	10.80
Total 109	barrels		$334.80
Difference in favor of thinning..			91.30
Cost of thinning, 22 cents per tree			22.00
Net gain			$69.30

Table 3. Apple Thinning—Ganos

Riverview Orchards, McBaine, Mo.

26 Trees—Thinned

Yield, bushels per tree	15.8
No. 1, bushels per tree	9.0

87 Trees—Not Thinned

Yield, bushels per tree	14.6
No. 1, bushels per tree	8.0

Difference in Favor of Thinning

Per tree, orchard run	1.2 bushels
Per tree, No. 1	1.0 bushels

Even when the cost of thinning was deducted, it was estimated by the manager of this orchard, that the net gain in this case was 50 to 75 cents per tree. The fruit was orchard graded and sold as No. 1 and as culls.

While the economical side of apple thinning is being determined further, the two examples in Tables 2 and 3 may be considered as quite typical of results that may be expected. Naturally, it will be found more remunerative to thin the better varieties of apples than the poorer sorts, which often are sold in bulk.

That an increased value usually results from thinning of peaches is so well understood by most growers that it is unnecessary to furnish particular figures.

Thinning Improves Color and Quality

Color of apples and peaches is largely a variety characteristic. The amount of color that each individual specimen will acquire, however, depends largely on exposure to sunlight, particularly at the time when the fruit ripens.

When trees bear a large crop, most of the branches are weighed down. This causes a shading of many fruits, especially those on the inside of the tree. Moreover, the fruit on drooping limbs, even those on the outside, will be so exposed to light that only the stem end will be colored. It is, of course, more desirable to have a blush on the cheek. But in order to obtain a good price for so-called "red" apples, it is necessary that they be well colored all over. This is secured only by proper and full exposure to light.

The interior of heavily loaded trees may be so shaded that the fruit will not only lack color, but also will be small in size. This is strikingly illustrated in the second photograph on page five. Under continuous shading, the leaves will remain small and will not function properly. Thus, not enough food will be available to the developing fruit.

The "opening up" of the apple tree by proper pruning, largely thinning out of branches, will in a measure overcome this difficulty. Heavy pruning of this nature is, however, somewhat dangerous in the midwestern states, where exposed limbs are frequently injured by sun scald. And the removing of small branches by so-called "detailed pruning" is expensive.

Fruit thinning is the most certain and most effective means of obtaining a crop of good color and high quality. Properly thinned branches will not weigh down and shade each other. More light will reach fruit well within the tree. The average amount of foliage supporting each apple will be greater, and the leaves will perform their function of food manufacture more efficiently. The result will be fruit of better color and finish and as a consequence of higher value.

Number of Defective Specimens Reduced

A large amount of injuries on apples and peaches are caused either directly or indirectly by parasitic insects and diseases. Most of these pests may be put under control by proper and timely spraying. During the latter part of the season, however, trees loaded with fruit cannot be sprayed properly, because of the fruit hanging in clusters. Then, too, branches drooping to the ground will often cover others so completely that many specimens on the inside will remain practically unsprayed. Thus the ravages of a host of pests will continue unchecked. Unless carefully examined, the damage will not be apparent till the fruit goes over the grading table and the income is registered in the ledger.

When fruit is thinned properly, only infrequently two specimens will touch each other. Hence, with usual care, they may be covered completely with spray material. Furthermore, branches that are properly thinned will be more nearly in their normal position, thus permitting the interior of the tree to be sprayed more efficiently.

Decreases Cost of Handling the Crop

A properly thinned tree will have most of its defective specimens removed early in the season. And fruit that is left will be better protected from injury. Certainly it will reduce materially the expense of harvesting, grading, and disposal of culls. This is particularly true of fruit that is graded more closely, like some of the late peaches and the better varieties of apples.

The saving in expense of handling the crop is often large enough to cover the cost of thinning, so much so that in almost all sections where fruit thinning has become a common practice, the cost of this work is not laid against the income from the crop. It is supposed to pay for itself.

(NOTE.—In the second and concluding part of this article, which will appear in the June issue, the effect of thinning on the tree itself is discussed, together with the time, method and cost of thinning.)

Nitrogen Produces Profitable Fruit

(Continued from Page 4)

characteristic response that fruit trees make to an application of an easily soluble nitrogen fertilizer when it is applied to the soil under the tree about 10 days or two weeks before the first blossoms are expected to open is an increased set. If an increase in yield is obtained the first year (after an application of nitrate), practically the whole increase is the result of the increased set. However, it is said (based on chemical analyses) that an apple from a fertilized tree contains no more nitrogen than an apple from an unfertilized tree. This seems rather strange, but remember that the fertilized tree produces a great many more apples than the unfertilized tree. To be sure, an apple contains nitrogen, as does all fruit; so that seven bushels of apples from a fertilized tree contain a great deal more total nitrogen than 1.8 bushels from an unfertilized tree. But this does not tell the whole story.

A productive tree is healthy and thrifty. The outstanding characteristics of a good bearing tree are dark-green leaves, a good growth of terminal wood, strong spurs, and healthy bark. These may be regarded as the necessary equipment of a productive fruit tree. It may be said that a bearing tree has to produce terminal wood, to produce the spurs, to produce the fruit. Furthermore, there must be healthy green leaves—the factories, without which the production of fruit would be impossible. The most important material required in the building of terminal wood, bark, leaves, spurs, and fruit, is nitrate nitrogen. Thus, to enable a tree to equip itself properly as a profitable producer, the grower should see to it that the soil conditions are right and that the tree is supplied with sufficient nitrate nitrogen.

A Grower Relates His Experiences

Charles S. Wilson, of Hall, Ontario county, New York, firmly believes that one has to do things in order to know them. Seven years ago Mr. Wilson returned to his father's farm where he assumed management of the apple orchards. One of the orchards, he said, was an 11-acre field of 14-year-old nonbearing McIntosh trees. Every year the trees would blossom in abundance, each time giving the promise of a bountiful harvest. But everything would fall off, and hence there were no harvests. For three successive years that orchard bloomed in full but failed to bear.

Mr. Wilson tried everything he could think of to make those trees produce apples—good tillage, the growing of cover crops, thorough and timely spraying, and he applied barnyard manure every other year. He considered cross-pollination and he cut out filler rows, but without success. Then he tried an experiment with nitrate nitrogen.

In 1925, just for a demonstration, Mr. Wilson selected a small plat of two rows (31 trees to the row), and around each tree in one row he applied four pounds of nitrate of soda. The trees in the other row received no fertilizer. The results were almost unbelievable.

In 1926, the 31 trees in the unfertilized or no-nitrate row produced in all only nine barrels of apples, whereas the trees in the other row which received the nitrate produced 39 barrels.

In 1927, the trees in the fertilized row received five pounds of nitrate of soda per tree, and they produced a total of 59 barrels of apples. The unfertilized row produced only 15.7 barrels.

The accompanying picture shows Mr. Wilson in the Wilson-Jones orchard comparing the yields from two 16-year-old McIntosh trees. One tree, fertilized with five pounds of nitrate of soda, produced seven bushels of apples, whereas the other, unfertilized, produced only 1.8 bushels. The containers shown in the picture are half-bushel baskets.

Mr. Wilson said that it took him about six years to "find himself" in the fruit-growing business, because it took him that long to discover that nitrate nitrogen "does the trick." As regards fertilizing apple trees, Mr. Wilson's experiences have brought him to this conclusion, which may also be applied to other kinds of fruit: "Nitrate is the food that apple trees need and must have to bear well. The application of nitrate will be an annual event in our orchards."

Much Credit Due Implement Manufacturers

FEW PEOPLE appreciate what the implement manufacturers contribute to agriculture. Although there are fewer farm operators engaged in the job of farm production and in the orchard and field than formerly, there are more workers engaged in the fashioning of tools for the farmer.

These factory workers provide the tools which make possible more efficient use of labor, better tillage, the spreading of fertilizers, more accurate planting and the combating of insect pests and diseases.

Some people have a mistaken notion that all implement manufacturers are out to exploit the farmer, which is not the case. The life of the implement business is even more dependent on the farmer than the life of the farmer's business is dependent on the implement business. It is very important, therefore, from the standpoint of the implement business that every piece of equipment that is sold the farmer be of economic benefit to him or make life easier and more satisfactory for him.

Dust 50 to 100 Acres PER HOUR!

AT COST OF ½¢ TO 2¢ PER ACRE

This new duster is the most amazing machine ever designed for insect control. Smashes all former costs and time performances in dusting orchard or field crops.

The Shunk Insecticide Duster uses any insecticide dust. A powerful fan driven by a Continental 14 H. P. motor throws a cloud of insecticide that completely covers the trees from top to bottom. Dusts all orchard and field crops, apples, peaches, pecans, vineyards, cotton, potatoes, forage, etc. Nothing else like it.

Write for Catalog F-11. Sent free.

SHUNK MFG. CO., Bucyrus, Ohio

Established 1854

SHUNK INSECTICIDE DUSTER

Tobaccos . . . . . Blend . . . . . Taste . . . . .

ALWAYS THE SAME!

WE STATE it as our honest belief that the tobaccos used in Chesterfield cigarettes are of finer quality and hence of better taste than in any other cigarette at the price.

LIGGETT & MYERS TOBACCO CO.

They're MILD

CHESTERFIELD CIGARETTES

and yet they SATISFY

American Fruit Grower Magazine for May

ONCE A YEAR an "Audit Bureau" makes a careful count, investigation and check-up of the subscriptions of this magazine. This would be of interest to our readers alone from the fact that the result of the audit, just completed, shows there are now over 250,000 paid subscribers to American Fruit Grower Magazine. This steady growth is especially significant in view of the fact that this magazine is one of the few American magazines that does not offer premiums, engage in "club offers," or make special subscription appeals of any kind. The reason for this sound, steady growth may be found in letters from our readers and contributors. We may be pardoned for quoting from two that fairly represent the general expressions of opinion. The first is from Dr. C. D. Matthews of North Carolina State College, a Horticulturist of national standing, whose contributions are eagerly welcomed by all commercial fruit growers. Says Dr. Matthews:

Now Over a Quarter of a Million Subscribers

"The AMERICAN FRUIT GROWER MAGAZINE has a very strong hold on the fruit growing industry of the country. I have received letters from growers throughout the United States, even as far west as Oregon. The tone of their letters made it evident to me that they consider AMERICAN FRUIT GROWER MAGAZINE a clearing house and supreme court of horticultural information, and that they were relying on it constantly for information and stimulation."

The other letter is from one of our new subscribers, a commercial fruit grower of Thornville, Ohio. In his letter, which enclosed his subscription, he says:

"Enclosed find check for $1.00 for three year subscription. I will appreciate very much having the April copy. I just read a friend's copy of the April issue and have yet to find as much highly valuable and practical information in any one issue of any magazine. It's all real food, no trash or filler."

Quite naturally the publishers take some pardonable pride in the standing this periodical has attained in the esteem of American horticulturists and fruit growers. As the magazine grows, its field of usefulness is correspondingly widened,—to the benefit of all. In the last letter quoted there is a suggestion. The loan of a copy very often results in a new subscriber. For your convenience, a coupon is inserted on page 28 of this issue, under the Advertisers' Index. In case your neighbor takes a fancy to the copy you loan him, as frequently happens, tell him we will, if requested, start his subscription with this issue. The idea is well worth trying. It would benefit both your neighbor and us.

HARRY W. WALKER, EDITOR
CHESTER G. CAMPBELL, Associate Editor

HARLEY F. WILSON
Fruit Farm Beekeeping

HAZEL BURSELL
The Fruit Grower's Wife

RALSTON R. HANNAS
Fruit Farm Poultry

MARY LEE ADAMS
The Orchard Home

ADVISORY BOARD OF CONTRIBUTING EDITORS

W. H. ALDERMAN
Chief, Division of Horticulture, University of Minnesota, St. Paul, Minn.

J. R. COOPER
Head, Department of Horticulture, University of Arkansas, Fayetteville, Ark.

M. J. DORSEY
Professor of Pomology, University of Illinois, Urbana, Ill.

W. L. FLOYD
Professor of Horticulture, College of Agriculture, Gainesville, Fla.

J. H. GOURLEY
Chief in Horticulture, Ohio Agricultural Experiment Station, Wooster, Ohio.

N. E. HANSEN
Department of Horticulture, South Dakota State College of Agriculture and Mechanical Arts, Brookings, S. D.

O. F. E. WINBERG
President, Gulf Coast Horticultural Society, Silverhill, Ala.

H. E. KNOWLTON
Associate Professor of Horticulture, West Virginia University, Morgantown, W. Va.

C. D. MATTHEWS
Chairman, Department of Horticulture, North Carolina State College, Raleigh, N. C.

W. C. O'KANE
Department of Entomology, University of New Hampshire, Durham, N. H.

A. J. OLNEY
Professor of Horticulture, University of Kentucky, Lexington, Ky.

E. P. SANDSTEN
Horticulturist, Colorado Agricultural Experiment Station, Fort Collins, Colo.

F. C. SEARS
Department of Pomology, Massachusetts Agricultural College, Amherst, Mass.

W. P. TUFTS
Assistant Professor in Pomology, University of California, Davis, Calif.

In This Issue

NITROGEN PRODUCES PROFITABLE FRUIT. By W. W. Weir 3
THE HANDY FRUIT PACKAGE INCREASES SALES. By Robert M. Clark 4
FOR ADDITIONAL PROFITS, THIN YOUR FRUIT. By A. E. Murneek 5
PUT THE HONEY BEE TO WORK PROVIDING POLLEN FOR YOUR BLOSSOMS. By H. D. Hootman 6
THE CARE OF THE COMMERCIAL ORCHARD. By T. J. Talbert (Part II) 7
EXCESS LIME IN SPRAYS AND DUSTS IN 1927. By F. H. Ballou and I. P. Lewis (Part II) 8
WHEN SHALL I SPRAY FOR CODLING MOTH? 11
INDEX TO ADVERTISEMENTS 28
MUCH CREDIT DUE IMPLEMENT MANUFACTURERS 29

DEPARTMENTS

FRUIT FARM BEEKEEPING 10
THE MARKET REVIEW 12
CHATS WITH THE FRUIT GROWER'S WIFE 14
THE ORCHARD HOME 16
EMBROIDERY PATTERNS 16
FRUIT FARM ENGINEERING 18
FRUIT FARM POULTRY 20
PATTERNS 26
ADVERTISERS' INDEX 28
EDITORIAL 30

IF THERE is one point upon which the great majority of people are in hearty accord, it is the fixed belief that our great and glorious American government can best serve industry by being careful never to engage in it. Consequently the proposal that the United States government take over the operation of Muscle Shoals and engage in the manufacture of fertilizer causes no general rejoicing. Muscle Shoals was erected during the war for the manufacture of explosives. Its cost was a war expenditure. Yet, as a power project, it has, or would have, a tangible value to Industry. We may as well face the fact that only a fraction of its cost can ever be returned to the national treasury. And the investment required simply for operation is so great that only a vast aggregation of capital could attempt to run it. No proof has been advanced that government operation as a nitrogen fixation plant would result in lowering the cost of nitrogen-carrying fertilizers, except if the plant were operated at the expense of the tax-paying public. The fertilizer industry is so closely related to agriculture that the former could not be demoralized without injury to the latter. The government in business at Muscle Shoals would be detrimental to Industry. Best to sell the Muscle Shoals proposition to Industry for what it will bring, and write off the loss as a war cost.

Keep the Government Out of Industry

TWO ARTICLES in this issue, that have for their ultimate aim the increase in actual crop return to the fruit grower, while they may appear to conflict, actually work together in utmost harmony. In "Put the Honey Bee to Work" we are advised of a practical method of insuring an adequate, or even a super-abundant setting of orchard fruits. Then we are told, authoritatively, "For Additional Profits, Thin Your Fruit." And both operations are consistent with sound, economical orchard practice. An abundance of fertile bloom is necessary to crop volume, for after all is said and done, a good crop is necessary for a profitable year. The grade of this crop can be influenced by thinning,—by the proper spacing of the individual fruits on the tree. By this means both size and color of the individual fruits are enhanced. Thus the two practices work together to greater profit to the grower. Proper pollination insures an adequate volume, and thinning insures the size and color.

Increase the Set of Fruit, Then Thin Your Crop

MAGAZINES, INC., PUBLISHERS
CHARLES W. PRICE, Chairman Board of Directors.
C. A. TUPPER, President and Treasurer.
HARRY W. WALKER, Vice-President and General Manager.
JAMES E. MONTGOMERY, Vice-President-Asst. to President.
E. G. K. MEISTER, Vice-President, Manager Cleveland.
A. C. BAMBERGER, Secretary.

American Fruit Grower Magazine
Established in 1880 Title Registered in U. S. Patent Office
53 WEST JACKSON BLVD., CHICAGO, ILL.
SUBSCRIPTION RATES: One Year 50c, Three Years $1.00, FOREIGN: $1.00 Per Year
ADVERTISING RATES: $2.25 Agate Line, Flat, or $31.50 inch.
Member Audit Bureau of Circulations.
THE NATIONAL FRUIT MAGAZINE OF AMERICA

REPRESENTATIVES
NEW YORK CITY, 250 Park Ave. ROGER FISON, Eastern Manager.
CHICAGO, 1119 Advertising Building. J. C. BILLINGSLEA.
CLEVELAND, 501 The Arcade. E. G. K. MEISTER, Manager.
ST. LOUIS, 1411 Syndicate Trust Bldg. A. D. McKINNEY.
LOS ANGELES, 611 S. Coronado St. LLOYD B. CHAPPELL, Pacific Coast Manager.